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COMPENSATION.

It was the time of autumn,
When leaves are turning brown,—
Green to yellow and pied and black;
And some were tumbling down.

It was the time of autumn,
When fruits are gathered in,
Some for the press, some for the vat,
And some for the miller's bin.

Then poor men fell a-playing,
For that their work was o'er;
And rich men fell a-sighing,
That they could play no more.

For the summer-time is a merry time,
If a man have leisure to play;
But the summer-time is a weary time,
To him who must work all day.

Then thanks to God the giver,
Who loves both great and small;
To every one he something gives,
But to no man gives all.

The rich who careth for himself
Finds, after pleasure, pain;
But the toiler whom God careth for,
Rests and is glad again.

Spectator.

B.

PASSING.

PASSETH the glow of the sunrise,
Passeth the gold of the west,
Passeth the dewdrop adorning
The lily's immaculate breast.

Waneth the light of life's springtime,
Paleth the sheen of the eyes,
Fadeth the bloom of the roses,
Loveliness sickens and dies.

Falleth the honor of greatness,
Vanisheth glory and fame,
Deafened Forgetfulness heeds not
The noise of historical name.

Changeth the newness of beauty,
Youthfulness comes but to go,
The delicate damask of twenty
Points but to age and his snow.

Wearieth man of his sadness,
Turneth he gaily to joy;
Joy is not lasting ever,
Pleasures like sorrows annoy.

Passing and changing and fading,
Perishing, hast'ning to death;
Thus on our planet is written
"All is a bubble—a breath."

LORD BRAVE.

TO MRS. GARFIELD.

UNSULLIED days with toil and struggle rife
Will win at last; yea, God had given him
all—

A seat above the conflict, power to call
Peace like a zephyr o'er men's turbid strife;
Home music too, children and heroine wife,
God gave—then gave Death's writing on
the wall,

And on the road the assassin: bade him fall
Death-stricken at the shining crest of life.

And yet our tears are sweet. God bade him
taste

Honey and milk and manna raining down;
Clothed him with strength for good whose
sweet renown

Touched wind and wave to music as it passed;
Then crowned him thine indeed—giving at
last

Heroic suffering, the true hero's crown.

Athenæum.

THEODORE WATTS.

DECEMBER AND JUNE.

It was but the wild waves playing,
It was but the wild wind's roar;
It was but a pale maid straying
Alone by the wreck-strewn shore.

It was but a day of December,
That followed a day of June;
But to spirits that can remember,
What a wail in the words, "Tis done!"

The dream is broken and faded,
The glory departed and flown;
And to hearts once loving as they did,
'Tis death to live on alone!

O sea, that her lover art hiding!
O wave, with thy dirge-like tune!
There's a fathomless gulf dividing
A day of December and June.

Spectator.

B.

A NIGHT STORM.

WAKING, and feeling all my misery lie
In one great load upon my down-crushed
heart,

Methought the warders of the gates on high
Were moved, and bade the portals fly apart
So the broad-sheeted light within might fall
To sun the shadowed mirror of my soul.
For one brief instant—vanished past recall—
A sense of latent mercy o'er me stole.

But swift the night her veil of darkness drew,
Black—black without the shimmer of a star,
While rang loud peals of terror. Then I knew
There stretched no city of refuge near or far.

For me no gates unclosed—no heaven smiled;
'Twas but the old earth tumult, fierce and wild.
Academy.

E. L. HERVEY.

From The Nineteenth Century.
DISEASE-GERMS.

AMONG the distinguished men who came together at the recent International Medical Congress — a gathering altogether unexampled for its combination of great and varied ability, and worthily representative of almost every country in which medicine is studied — there was no one whose presence was more universally or more cordially welcomed, than a quiet-looking Frenchman, who is neither a great physician, a great surgeon, or even a great physiologist; but who, originally a chemist, has done more for medical science than any *savant* of his day. And this, not only (probably not so much) through the results already attained by Pasteur himself and by others working on his ideas, great though these results are; but through the entirely new direction he has given to scientific inquiry, the number of new paths of research he has opened out, and of new clues he has afforded to those who will follow them up; and, last but by no means least, by the admirable example he has afforded, in the strictness and severity of his own methods (which have made him almost unerring in his predictions, and have given his conclusions the force of demonstrations), to those who would carry on the same lines of inquiry.

And here I would stop to note, as honorable to the disinterested character of a profession which has been lately the object of violent abuse for its (alleged) selfish and mercenary spirit, that this unique welcome was given, not to a great physician who had discovered a cure for gout, cancer, or consumption, by the use of which it would be enriched — not to a bold surgeon who had brought into vogue some wonderful operation, the success of which would tend to its renown — but to the scientific investigator of the *causes* of disease, whose work belongs altogether to the domain of *preventive* medicine, and thus, so far from being likely to benefit its members pecuniarily, tends only to diminish their remunerative employment. I never felt so proud of belonging to the body which still does me the honor to recognize me as one of its members, as

I did when Sir James Paget, the president of the Congress, paused in his opening address, to point out on the platform behind him the greatest living exemplar of the truths he was so admirably enforcing; and when the whole of his vast audience — the like of which had never before been gathered in St. James's Hall, and perhaps never will be again — enthusiastically cheered, not once only, but again and again, the scientific veteran whose renown has spread from his quiet Parisian laboratory over the whole civilized world.

In order that the last of Pasteur's great achievements — which, with some of the ideas it suggests, it is my object now to bring before the readers of the *Nineteenth Century* — may be properly appreciated, it will be well for me to sketch out briefly what has been the nature of his life-work, from the time when the singular beauty of some of his chemico-physical researches (which obtained for him in 1856 the Rumford Medal of the Royal Society) marked him out as one likely to attain further distinction.

It seems to have been by his special interest in the chemistry of organic substances, that he was early led to examine into the question of fermentation; which had come to present an entirely new aspect through the discovery of Cagniard de la Tour that yeast is really a *plant* belonging to one of the lowest types of fungi, which grows and reproduces itself in the fermentable fluid, and whose vegetative action is presumably the cause of that fermentation, just as the development of mould in a jam-pot occasions a like change in the upper stratum of the jam, on whose surface, and at whose expense, it lives and reproduces itself. Chemists generally — especially Liebig, who had a fermentation theory of his own — pooh-poohed this idea altogether; maintaining the presence of the yeast-plant to be a mere concomitant, and refusing to believe that it had any real share in the process. But in 1843, Professor Helmholtz, then a young undistinguished man, devised a method of stopping the passage of organic germs from a fermenting into a fermentable liquid, without checking the passage

of fluids; and as no fermentation was then set up, he drew the inference that the "particulate" organic germs, not the soluble material of the yeast, furnish the *primum mobile* of this change, — a doctrine which, though now universally accepted, had to fight its way for some time against the whole force of chemical authority.*

A little before Cagniard de la Tour's discovery, a set of investigations had been made by Schulze and Schwann, to determine whether the exclusion of air was absolutely necessary to prevent the appearance of living organisms in decomposing fluids, or whether these fluids might be kept free from animal or vegetable life, by such means as would presumably destroy any germs which the air admitted to them might bring in from without, such as passing it through a red-hot tube or strong sulphuric acid. These experiments, it should be said, had reference rather to the question of "spontaneous generation" or "abiogenesis," than to the cause of fermentation and decomposition; its object being to determine whether the living things found by the microscope in a decomposing liquid exposed to the air, spring from germs brought by the atmosphere, or are generated *de novo* in the act of decay — the latter doctrine having then many upholders. But the discovery of the real nature of yeast, and the recognition of the part it plays in alcoholic fermentation, gave an entirely new value to Schulze's and Schwann's results; suggesting that putrefactive and other kinds of decomposition may be really due, not (as formerly supposed) to the action of atmospheric oxygen upon unstable organic compounds, but to a new arrangement of elements brought about by the development of germinal particles deposited from the atmosphere.

It was at this point that Pasteur took up the inquiry; and for its subsequent complete working-out, science is mainly indebted to him: for although other inves-

tigators — notably Professor Tyndall — have confirmed and extended his conclusions by ingenious variations on his mode of research, they would be the first to acknowledge that all those main positions which have now gained universal acceptance — save on the part of a few obstinate "irreconcilables" — have been established by Pasteur's own labors. These positions may be briefly summarized as follows:—

1. That no organic fluid undergoes *spontaneous* fermentation or decomposition, even in the presence of atmospheric air; any such action being originated and maintained only by the developmental action of definite organic germs.

2. That different kinds of fermentation (using that term in its large sense) are produced by organic germs of different species. Thus, while *torula* sets going the alcoholic fermentation in a saccharine wort, other fungoid germs will set up the acetous, and others, again, the putrefactive fermentation, when introduced into fluids of the same kind.

3. That many different kinds of germs — notably those of the *bacteria*, which induce putrefactive fermentation — are constantly floating in the ordinary atmosphere, so as to be almost certainly self-sown in any organic fluid freely exposed to it.

4. That if these germs be removed by mechanical filtration, or be got rid of by subsidence, or be deprived of their potency by chemical agents which destroy their vitality, the most readily decomposable organic fluid may be subjected to the freest contact with the air from which the germs have been thus eliminated, without undergoing any change.

5. That as there is no such thing as fermentation without the presence of germ-particles, so there is no such thing as the spontaneous origination of such germs; each kind, when sown in the liquid, reproducing itself with the same regularity as in higher plants, and thus continuously maintaining its own type.

6. That such germ-particles, when dried up, can not only maintain their germinal power for unlimited periods, starting into renewed activity so soon as the requisite

* It was, I remember, in or about that year, that Professor Liebig's visit to England gave me the opportunity of showing him some yeast under a high power of the microscope. He said that he had not before seen its component cells so distinctly.

conditions are supplied; but that, in this state of dormant vitality, they can be subjected to influences which would destroy the life of the growing plants—such as very high or very low temperatures, the action of strong acid or alkaline solutions, and the like.*

The first application of these doctrines to the study of disease in the living animal, was made in a very important investigation, committed to Pasteur by his old master in chemistry (the eminent and eloquent Dumas), into the nature of the *pébrine*, which was threatening to extinguish the whole silk-culture of France and Italy. It had been previously ascertained that the bodies of the animals affected with this disease (whether in the worm, chrysalis, or moth stage) swarm with peculiar minute corpuscles, which even pass into the undeveloped eggs of the female moth; but there was no evidence that these corpuscles were independent, self-developing organisms introduced from without; many regarding their presence as a mere expression or concomitant of the disorder, not as its cause. It would be too long to detail the steps of this most complicated and difficult inquiry; and I must satisfy myself with the mere statement that it not only proved completely successful as to what may be termed its commercial object, but that, though it concerned only a humble worm, it laid the foundation of an entirely new system and method of research into the nature and causes of a large class of diseases in man and the higher animals, of which we are now only beginning to see the important issues.

Among the most *immediately* productive of its results, may be accounted the "antiseptic surgery" of Professor Lister; of which the principle is the careful exclusion of living bacteria and other germs, alike from the natural internal cavities of the body, and from such as are formed by disease, whenever these may be laid open by accident, or may have to be opened surgically. This exclusion is effected by the judicious use of carbolic acid, which

kills the germs without doing any mischief to the patient; and the saving of lives, of limbs, and of severe suffering, already brought about by this method, constitutes in itself a glorious triumph alike to the scientific elaborator of the germ doctrine, and to the scientific surgeon by whom it has been thus applied.

A far wider range of study, however, soon opened itself. The revival by Dr. Farr of the doctrine of *zymosis* (fermentation),—long ago suggested by the sagacity of Robert Boyle, and practically taken up in the middle of the last century by Sir John Pringle (the most scientific physician of his time),—as the expression of the effect produced in the blood by the introduction of a specific poison (such as that of small-pox, measles, scarlatina, cholera, typhus, etc.), had naturally directed the attention of thoughtful men to the question (often previously raised speculatively), whether these specific poisons are not really organic germs, each kind of which, a real *contagium vivum*, when sown in the circulating fluid, produces a definite *zymosis* of its own, in the course of which the poison is reproduced with large increase, exactly after the manner of yeast in a fermenting wort. Pasteur's success brought this question to the front, as one not to talk about, but to work at; the lead being taken, I believe, by M. Chauveau, the distinguished professor of medicine at Lyons; but other investigators (among them our own Prof. Burdon Sanderson) following closely in his wake. Pasteur's own attention seems at that time to have been chiefly directed to what may be termed the pathology of beer, wine, and vinegar, and to the fight he had still to maintain with the advocates of abiogenesis. I shall not stop to describe the valuable improvements he has introduced into the manufacture of alcoholic and acetous liquors, with a view of preventing those injurious fermentations which often interfere with the normal processes, and sometimes ruin their results; but shall keep to the object I have specially in view, the exposition of those more recent contributions to "preventive medicine," which constitute him the greatest public benefactor of his time.

* The evidence on which these conclusions rest is fully stated in Professor Tyndall's recently published treatise on the "Floating Matter of the Air."

An epizootic malady extensively prevails on the continent of Europe, though fortunately but little known in this country, which is sometimes designated "splenic fever," and sometimes "anthrax" or "carbuncular" disease, while it is known in France as *charbon* or *pustule maligne*. In its most malignant form, it causes the death of the horses, cattle, and sheep affected by it, in the course of four-and-twenty hours. In the less severe form of anthrax disease it occasions great and prolonged suffering, even when final recovery takes place. Both forms seem propagable to man. Between the years 1867 and 1870, above fifty-six thousand deaths from this disease are recorded as having occurred among horses, cattle, and sheep, and five hundred and twenty-eight deaths among the human population, in the single district of Novgorod in Russia. It appears to be scarcely ever absent from France, and is estimated to involve an annual loss of many millions of francs on the part of breeders in that country; whole flocks and herds being carried off at once, and their proprietors ruined. A mild epizootic of this type seems to have prevailed in this country between 1850 and 1860; while the "plague of boils," under which many of our human population (my unhappy self among the rest) suffered during some part of that decennium, was probably brought on us by infection from animals. Attention has lately been drawn to a severe and often fatal malady occurring among the "wool-sorters" at Bradford, which is pretty certainly a modification of splenic fever, communicated by the wool of sheep infected with that disease.

As far back as 1850 it was observed by two distinguished French pathologists, MM. Rayer and Davaine, that the blood of animals affected with splenic fever contained minute transparent rods; but their fungoid nature and life history was first worked out a few years since by a young German physician named Koch, whose account of it was soon confirmed by Cohn, the eminent botanical professor of Breslau, and afterwards in this country by Mr. Ewart, all of whom "cultivated" the plant in aqueous humor, or some other organic liquid of suitable character, kept at nearly blood heat. They found the "rods" to be produced by progressive extension from germ particles of extreme minuteness. At first they are simple tubes divided at intervals by transverse partitions; but after a time minute

dots are seen within these tubes, which gradually enlarge into ovoid bodies that lie in rows within the rods; and at last the rods fall to pieces, liberating the germ particles they included. The minutest drop of the fluid containing these germs, if conveyed into another portion of cultivated fluid, initiates the same process of growth and reproduction; and this may be repeated many times without any impairment of the potency of the germs, which, when introduced by inoculation into the bodies of rabbits, guinea pigs, and mice, develop in them all the characteristic phenomena of splenic fever. Koch further ascertained that the blood of animals that succumbed to this disease might be dried and kept for four years, and might be even pulverized into dust, without losing its power of infection.

Here I would stop to cite the prophetic words used by Professor Tyndall, when giving an account to a Glasgow audience, in 1876, of Koch's then recent researches: "The very first step towards the extirpation of these contagia is the knowledge of their nature; and the knowledge brought to us by Dr. Koch will render as certain the stamping out of splenic fever, as the stoppage of the plague of *pébrine* by the researches of Pasteur."

It was but fitting that the complete verification of this prediction should be the direct result of the labors of the illustrious man on whose previous work it was based; although others were at work, more or less successfully, in the same direction.

One of the first questions examined by Pasteur was the cause of outbreaks of *charbon* in its most deadly form among flocks of sheep feeding in what appeared to be the healthiest pastures, far removed from any obvious source of infection. Learning by the inquiries he instituted that special localities seemed haunted, at distant intervals, by this plague, he inquired what had been done with the bodies of the animals that had died of it; and learned that it had been customary to bury them deep in the soil, and that such interments had been made, it might have been ten years before, beneath the surface of some of the very pastures in which the fresh outbreaks took place. Notwithstanding that the depth (ten or twelve feet) at which the carcasses had been buried, seemed to preclude the idea of the upward travelling of the poison-germs, the divining mind of Pasteur found in *earth-worms* a probable means of their conveyance; and he soon ob-

tained an experimental verification of his idea, which satisfied even those who were at first disposed to ridicule it. Collecting a number of worms from these pastures, he made an extract of the contents of their alimentary canals; and found that the inoculation of rabbits and guinea pigs with this extract gave them the severest form of charbon, due to the multiplication in their circulating current of the deadly *anthrax bacillus*, with which their blood was found after death to be loaded.

Another mode in which the disease germs of anthrax may be conveyed to herds of cattle widely separated from each other and from any ostensible source of infection, was discovered by the inquiries prosecuted, a few years ago, by Professor Burdon Sanderson at the Brown Institution, in consequence of a number of simultaneous outbreaks which occurred in different parts of the country. It was found that all the herds affected had been fed with brewers' grains supplied from a common source; and on examining microscopically a sample of these grains, they were seen to be swarming with the deadly bacillus, which, when it has once found its way among them, grows and multiplies with extraordinary rapidity.

The next important step in this investigation, was the discovery of the modification in the potency of the poison, which can be produced by the "cultivation" of this bacillus. Every one knows that some of our most valued esculent plants and fruits are the "cultured" varieties of types which man would scarcely care to use in their original state, on account of the unpleasantness of their flavor or their semi-poisonous qualities. And now that we know that these disease germs are really humble types of vegetation, the idea naturally suggests itself whether they too may not be so far modified by the "environment" in the midst of which they are developed, as to undergo some analogous modification. Two modes of such "culture" suggest themselves: the introduction of the germs into the circulating current of animals of a different type, and its repeated transmission from one such animal to another; and cultivation carried on out of the living body, in fluids (such as blood serum or meat-juice) which are found favorable to its growth, the temperature of the fluid in the latter case being kept up nearly to blood heat. Both these methods have been used by Pasteur himself and by Professor Burdon Sanderson; and the latter especially

by M. Toussaint of Toulouse, who, as well as Pasteur, has experimented also on another bacillus which he had found to be the disease germ of a malady termed "fowl cholera," which proves very fatal among poultry in France and Switzerland.* It has been by Pasteur that the conditions of the mitigation of the poison by culture have been most completely determined; so that the disease produced by the inoculation of his "cultivated" virus may be rendered so trivial as to be scarcely worth notice. His method consists in cultivating the bacillus in meat-juice or chicken broth, to which access of air is permitted while dust is excluded; and then allowing a certain time to elapse before it is made use of in inoculation experiments. If the period does not exceed two months, the potency of the bacillus seems but little diminished; but if the interval be extended to three or four months, it is found that though animals inoculated with the organism take the disease, they have it in a milder form, and a considerable proportion recover; whilst, if the time be still further prolonged, say to eight months, the disease produced by it is so mild as not to be at all serious, the inoculated animals speedily regaining perfect health and vigor.†

Thus, then, it becomes possible to affect sheep and cattle with a form of anthrax disease so mild, as to bear much the same relation to the severer forms that cow-pox bears to small-pox; and for this artificial affection with the mitigated disorder, Pasteur uses the term "vaccination." The question that now arises—to which the whole previous investigation has led up—is the most important of all: does this "vaccination" with the mild virus afford the same protection against the action of the severe, that is imparted by cow-pox vaccination against small-pox? To this question affirmative an-

* I have seen notices of its serious prevalence during this very summer in some of the localities most frequented by tourists.

† It is not a little curious that as culture of one kind can mitigate the action of the poison-germs, so culture of another kind may restore, or even increase, their original potency. It has been found by Pasteur that this may be effected by inoculating with the mitigated virus a new-born guinea pig, to which it will prove fatal; then using its blood for the inoculation of a somewhat older animal; and repeating this process several times. In this way a most powerful virus may be obtained at will—a discovery not only practically valuable for experimental purposes, but of great scientific interest, as throwing light upon the mode in which mild types of other diseases may be converted into malignant. By Dr. Grawitz, indeed, it has been recently asserted that even some of the most innocent of our domestic microphytes may be changed by artificial culture into disease-germs of deadly infectiveness.

swers were last year obtained by Prof. Greenfield (on Prof. Burdon Sanderson's suggestion) in regard to bovine animals, and by M. Toussaint in regard to sheep and dogs; the former, when "vaccinated" from rodents, and the latter from fluids "cultivated" outside the living body after a method devised by M. Toussaint, proving themselves incapable of being infected with any form of anthrax disease, though repeatedly inoculated with the malignant virus; and remaining free from all disorder, either constitutional or local. The same result having been obtained from experiments made by Pasteur himself, probably about the same date, with charbon virus cultivated in the manner previously described, it was deemed expedient by one of the provincial agricultural societies of France, that this important discovery should be publicly demonstrated on a great scale. Accordingly, a farm and a flock of fifty sheep having been placed at M. Pasteur's disposal, he "vaccinated" twenty-five of the flock (distinguished by a perforation of their ears) with the *mild* virus on the 3rd of May last, and repeated the operation on the 17th of the same month. The animals all passed through a slight indisposition; but at the end of the month none of them were found to have lost either fat, appetite, or liveliness. On the 31st of that month, all the fifty sheep, without distinction, were inoculated with the *strongest* charbon virus; and M. Pasteur predicted that on the following day the twenty-five sheep inoculated for the first time would all be dead, whilst those protected by previous "vaccination" with the mild virus would be perfectly free from even slight indisposition. A large assemblage of agricultural authorities, cavalry officers, and veterinary surgeons having met at the field the next afternoon (June 1), *the result was found to be exactly in accordance with M. Pasteur's predictions.* At 2 o'clock twenty-three of the "unprotected" sheep were dead; the *twenty-fourth* died within another hour, and the *twenty-fifth* an hour afterwards. But the twenty-five "vaccinated" sheep were all *in perfectly good condition*; one of them, which had been designedly inoculated with an extra dose of the poison, having been slightly indisposed for a few hours, but having then recovered. The twenty-five carcasses were then buried in a selected spot, with a view to the further experimental testing of the poisonous effect produced upon the grass which will grow over their graves. But the re-

sult, says the reporter of the *Times* (June 2), "is already certain; and the agricultural public now know that an infallible preventive exists against the charbon poison, which is neither costly nor difficult, as a single man can inoculate a thousand sheep in a day." I have since learned that this protection is being eagerly sought by the French owners of flocks and herds; and if any severe epidemic of the same kind were to break out in this country, our own agriculturists would probably show themselves quite ready to avail themselves of it. To the "wool-sorters" of Bradford it must prove a most important boon, if they can be led to understand its value.

That this is not to remain an isolated fact, but will be the first of a series of discoveries of surpassing importance (some of them already approaching maturity), is shown by the fact that Pasteur has found himself able to impart a like protection against fowl cholera, by "vaccinating" chickens with its cultivated bacillus.

These wonderful results obviously hold out an almost sure hope of preventing the ravages, not merely of the destructive animal plagues that show themselves from time to time among us, but of doing that for some of the most fatal forms of human infectious disease, which Jennerian vaccination has already done—as shown by Sir Thomas Watson in these pages—for what was once the most dreaded of them—small-pox. It is unfortunately too true that with the reduction of small-pox mortality, there has been an increase in the mortality from measles and scarlatina exceeding that which increase of population would account for; the number of deaths in England and Wales from the former of these diseases frequently exceeding ten thousand in the year; while the annual mortality from the latter averages nearly twenty thousand, sometimes exceeding thirty thousand. It scarcely seems too much to expect that before long, as Professor Lister last year suggested, "an appropriate 'vaccine' may be discovered for measles, scarlet fever, and other acute specific diseases in the human subject;" for already, as I have been informed by one of the most distinguished of the United States' members of our Congress, researches have been there made, with very promising results, on the "cultivation" of the *diphtheritic* virus—the mortality from which, in England and Wales, during the last decade, has averaged nearly three thousand annu-

ally, being for the seven years, 1873-79, *half as great again* as the mortality from small-pox during the same period.

Another important line of inquiry, which was supposed by many able pathologists to have been closed by the negative results of previous investigations, has now to be reopened under the new light shed upon it by Pasteur's discoveries: I refer to the relation between cow-pox and small-pox. It is well known that Jenner himself, struck with the fact that the protective influence of successful vaccination against the occurrence of small-pox is about the same as that of a first attack of small-pox against its recurrence, suspected that cow-pox might really be small-pox modified by passing through the living body of the cow; and attempts have been made, at different times and in various places, to test the truth of this hypothesis. Before proceeding, however, to discuss that question, it will be advantageous to consider what new light is cast by recent scientific discovery, on the *nature* of the protection afforded by successful vaccination.

Notwithstanding the "strong assurance of faith," on the part of Jenner and his immediate disciples, in regard to the permanent efficacy of vaccination, it is certain that, as time went on, a suspicion grew up among vaccinators of long experience, that vaccinia has a tendency to degenerate, *i.e.* to lose its protective power, in proportion to the remoteness of its derivation from the original (cow) stock. During my own early professional life (1830-40) in Bristol this conviction was prevalent among the older practitioners who recollected the early Jennerian cow-pock. The vesicle (they said) was smaller than the original, and ran its course more quickly; and the want of the slight constitutional disturbance formerly observable at its maturity, showed that the body of the subject was not thoroughly affected by the disorder. Hearing in 1838 of a renewed outbreak of cow-pox among cows at Berkeley, Mr. J. B. Estlin (whose pupil I had been) went down thither, and brought back a supply of original vaccine lymph, which (with the assistance of his brother practitioners) was soon diffused through Bristol and its neighborhood, and proved to reproduce the characteristic Jennerian vesicle. The circumstances attending this re-introduction of an original *vaccinia*, which I have recently detailed elsewhere,* strongly im-

pressed me with the idea that the vaccine virus became "tempered" (so to speak) by passing through the human body; its original potency suffering diminution with the increase in the number of subjects through which it had been transmitted; whilst, at the same time, the proportion of subjects in whom the vaccination "took," which had been small with the original "vaccine," increased when it had (so to speak) become "humanized." This gradual modification we now understand to be the natural result of the continued "cultivation" of vaccinia in the human body; so that the diminution of the protective power of vaccination by such "cultivation" through a long succession of generations, is just what might be scientifically expected. A most curious proof of the modification which vaccinia, thus humanized, has undergone, is afforded by the experiments of Dr. Martin (of Roxborough, Massachusetts); who states, that whilst there is no difficulty in keeping up an *original* vaccinia for any length of time by continuous transmission through heifers, the *humanized* vaccinia, if re-communited to heifers, soon dies out; this retro-vaccination (as Dr. Martin terms it) *never succeeding beyond the third remove* from the human into the bovine subject.

There can now, therefore, be no reasonable doubt that a very large proportion of the failures triumphantly adduced by anti-vaccinationists as proofs that the alleged protective power of vaccination is a mere assumption, are attributable to this degeneration; the protection diminishing with the "humanization" of the virus employed, and this being proportional to the remoteness of its derivation from the bovine stock.

During the war between the Northern and Southern States, Dr. Martin (who had previously acquired a reputation for special knowledge of this subject) was specially employed by the government of the North to proceed to the various localities in which severe outbreaks of small-pox were from time to time taking place; and he most commonly found that there had either been no previous vaccination at all, or vaccination with degenerate virus. Armed with a supply of good lymph, and with military authority (which enabled him to practise a really *compulsory* vaccination and re-vaccination), he always found himself able to control these outbreaks, and to prevent their recurrence. Anxious, however, to obtain (if possible) a fresh primary stock of vaccine, he advertised extensively

* See the *Lancet*, May 10.

for information as to any *original* case of cow-pock; but could hear of none. And he then imported from France some dried lymph of what is known as the "Bouigival" stock, which had been continuously transmitted, through a long succession of heifers, from its original bovine parentage in that place. This transmission he has himself kept up in the neighborhood of Boston (New England) for the last ten years; and he assures me, (1) that vaccination from this heifer stock, if practised according to his instructions, is quite as successful (in regard to the proportion of cases in which it "takes") as vaccination from the human arm; (2) that the vesicle produced by it is always of the true old Jennerian type, no deterioration having taken place in its long descent from the original stock, such as is produced by "humanization;" (3) that he has never seen either erysipelas or any other of the "accidents" which sometimes (as in my own Bristol experience in 1838) attend the direct vaccination from the *original* cow-stock; and (4) that having offered a considerable reward in all the principal towns of the Union, for information as to the occurrence of any case of small-pox within ten years after thorough vaccination with his heifer lymph, this reward has never been claimed; although, since its introduction, the United States have been traversed (in the years 1874-76) by an epidemic of small-pox, which will be long remembered there for its peculiar virulence and the wide-spread mortality it occasioned.*

This epidemic was clearly the same as that which had prevailed with somewhat of the same severity, not only in this country, but also over the greater part of the continent of Europe, two years previously; and hence there can be little doubt that the high rate of mortality by which it was everywhere characterized

must have been due to general rather than to local causes. It had the good effect of frightening many of our local health authorities into a more efficient observance of their duty in regard to vaccination; and the result has been that during the last two years the reports of the registrar-general show an *almost complete* extinction of small-pox in the nineteen great towns whose aggregate population (about three and three-fourths millions) equals that of the metropolis. The fresh outbreak which has taken place during the first half of the present year has been almost entirely restricted to the London area, and evidently points to the importance of a more strict enforcement of the vaccination law, which is at present rendered nugatory as regards no considerable proportion of the metropolitan population, by the migration of families from one district to another.

The prolonged experience of Dr. Martin in regard to the facility of keeping up heifer vaccination continuously from the original stock, altogether confirmatory as it is of what has been reported on this subject from France, Belgium, and St. Petersburg, seems to me to justify the demand that our government should maintain the requisite establishment, on a sufficient scale to meet the requirements of the whole country; so that every vaccination and re-vaccination may be performed (if desired) with lymph derived from the original cow-stock, without any humanization whatever.* The vaccinia of Jenner may be thus maintained in its original efficacy, without the impairment of its protective influence by prolonged "cultivation" in the human subject; and thus only can it be secured against the contaminating influence of human disease, the liability to which furnishes the anti-vaccinationists with their strongest weapon.

No benefit can be reasonably expected from the adoption of any system which is based on the induction of vaccinia in a calf or heifer, by inoculation with lymph which has been "humanized" by long transmission through a succession of human beings. For, as is proved by Dr. Martin's experiments on this *retro*-vaccination, such lymph has been so altered by "humanization," that the germs it contains do not properly reproduce them-

* The distinguished American physicians whose attendance at the recent Congress gave me the opportunity of conversing with them on this subject, entirely confirmed Dr. Martin's account of the severity of that epidemic; which in some respects bore such a resemblance to the "black death" that carried off what was estimated at *one-third* of the population of Europe in the fourteenth century, as to suggest that the latter may have been really a peculiarly malignant small-pox. My friends greatly regretted the want in the United States of a system of "compulsory" vaccination; but said that when outbreaks of small-pox occurred in their towns, the municipal authorities took the matter in hand, and insisted on the immediate vaccination and re-vaccination of all dwellers in the infected localities, by which means these outbreaks were brought under control. As there is no registration system in the American Union, I could not obtain any definite information as to the amount of its small-pox mortality; but no one seemed to entertain the least doubt as to the preventive efficacy of vaccination.

* I am assured by Dr. Martin that vaccination with heifer lymph dried on ivory "points" succeeds in as large a proportion of cases as vaccination with fresh human lymph, provided that it be practised according to the method which his large experience has led him to adopt as the most effective.

selves in the system of the calf; thus showing that it no longer possesses the attributes of true vaccinia. And although the liability to contamination from human disease may be thus greatly diminished, it cannot be certainly said to have been destroyed.

We now come to the bearing of Pasteur's researches on the question of the fundamental identity of small-pox and cow-pox, originally mooted by Jenner. Attempts at its solution were made, early in the present century, by the inoculation of bovine animals with small-pox virus; and it was asserted that in this way true vaccinia had been artificially induced. But the evidence in support of this assertion did not command general assent; and it was not until Dr. Thiele of Kasan published, about forty years ago, an account of his experiments, that the doctrine obtained any considerable amount of acceptance. According to the citations given by Mr. Simon in his valuable report on small-pox and vaccination, issued under government authority in 1857, Dr. Thiele not only repeatedly succeeded in producing a genuine vaccinia by inoculating bovine animals with small-pox virus, but himself used this artificial vaccine largely and successfully in human vaccination, and propagated it extensively by the instrumentality of other vaccinators; its protective power being found to be fully equal to that of the natural vaccinia. But further, Dr. Thiele asserted that he could produce this artificial vaccine without the use of the cow at all, by *diluting the small-pox virus with warm milk*, or, as we should now term it, "cultivating" its living germs in that fluid. I can scarcely help thinking that the great improbability — as it then seemed — of such a conversion, has thrown a discredit upon the whole of Dr. Thiele's statements, which has caused them to be ignored by most subsequent workers on this subject. But should that part of his results be ever confirmed, he must be accorded the credit of having anticipated, in a most remarkable way, one of the most important of Pasteur's methods; though, it is pretty certain, without knowing, or even guessing, their true *rational*. For it must have been not by *dilution* of the virus (like that of a chemically acting fluid), but by a *modification in the character of the disease germs* resulting from their development in milk, that this part of Thiele's results (supposing them to be genuine) was produced.

Simultaneously with those of Dr.

Thiele, a set of experiments of the same kind was being carried on in our own country by Mr. Ceely of Aylesbury; the results of which, however, were not equally satisfactory. He did, it is true, produce an eruption in cows inoculated with small-pox virus, which was transmissible by inoculation to the human subject; but this eruption seems to have had rather the character of a modified *variola*, than that of a true *vaccinia*; and as its transmission by inoculation through a succession of human subjects did not produce what the best judges considered a genuine cow-pock, it was allowed to die out. The case was very different, however, with another set of experiments made a few years afterwards (in ignorance of Mr. Ceely's) by Mr. Badcock, a druggist at Brighton; who was led to institute them through having himself suffered an attack of small-pox, though vaccinated in early life, and having been thus led to suspect that the protective power of vaccination had undergone deterioration. From the account he gave of his work in a small pamphlet published in 1845 (for a sight of which I am indebted to his son), it appears (1) that he inoculated his cows with small-pox virus furnished to him from an unquestionable source; * (2) that this inoculation produced vesicles which were pronounced by some of the best practitioners of Brighton to have the characters of genuine vaccinia; (3) that lymph drawn from these vesicles, and introduced by inoculation into the arms of children, produced in them vaccine vesicles of the true Jennerian type; (4) that free exposure of some of these children to small-pox infection showed them to have acquired a complete protection; and (5) that this new stock of "vaccine" had been extensively diffused through the country, and had been fully approved by the best judges of true vaccinia, both in London and the provinces.

Mr. Simon, writing in 1857, stated, that from the new stock thus obtained by Mr. Badcock (not once only, but repeatedly) more than fourteen thousand persons had been vaccinated by Mr. Badcock himself; and that he had furnished supplies of his lymph to more than four thousand medical practitioners. And I learn from Mr. Badcock, junior, who is now a public vac-

* The only possible fallacy in these experiments, as it seems to me, might lie in his medical friend, Mr. (afterwards Sir J.) Cordy Burrows, having supplied him with vaccine lymph, instead of with variolous virus. But though this might have been the case once or twice, it could scarcely have happened several times, except by design, which is scarcely to be thought of.

nator at Brighton, that this stock is still in use in that town and neighborhood.

Against these *positive* results are to be set the *negative* results of attempts made in the same direction by many other able experiments, such as Professor Chauveau and his coadjutors, the recent Belgian Commission, and Professor Burdon Sanderson, as well as the unsatisfactory results obtained by Ceely. But I cannot see that their *non-successes* are in any way contradictory of the *absolute* and *complete* successes which, if testimony is to be trusted, were obtained by Thiele and Badcock. The lesson taught by the failures appears to me to be the careful imitation of the conditions under which the successes were obtained; and as Mr. Badcock, senior, is still living, and is said to be both able and willing to give all needful information, it is the intention of Professor Burdon Sanderson and myself to take an early opportunity of personally obtaining this from him, with a view to a careful and thorough testing of his experiments, with every precaution that experience can devise.

The recent meeting of the Medical Congress has given me the opportunity of personal communication on this subject both with M. Pasteur and M. Chauveau. From the former I learned that his use of the term "vaccination" in connection with his employment of the mitigated virus of charbon and chicken cholera, as a protective against the malignant forms of those diseases, was intended rather as a compliment to Jenner, than as expressive of any belief in the identity of vaccinia and variola. The question, he said, was one which he had not himself investigated, and on which he did not feel himself justified in forming an opinion. But when I asked him whether he considered it to have been already decided in the negative, and further informed him of the positive evidence afforded by Mr. Badcock's experiments, he expressed himself strongly in favor of regarding the question as still *open*, to be decided by further researches carried on under the new light afforded by the results of his own recent investigations. I found M. Chauveau himself not less willing to admit the force of the strong analogy between the protective agency of the Jennerian and what I may term the Pastorian "vaccination," and not less ready to accept the results of any thorough re-investigation of the subject. Such a re-investigation I hope shortly to see carried out at the Brown Institution by the accomplished

young successor to Professor Greenfield, under the superintendence and with the co-operation of Professor Burdon Sanderson, in whose great knowledge, long experience, and wise judgment, all who know him and his pathological work have the fullest confidence.

Now putting altogether on one side the purely scientific interest of this investigation, let us see in what position we shall be, if it should issue in the confirmation of Jenner's view of the fundamental identity of *vaccinia* and *variola*; proving cow-pox to be not a disease *sui generis*, but small-pox modified by passing through the cow.

In the first place, we shall have the *scientific basis* for the practice of vaccination, which it has never yet possessed. For it will be then clear that the protective power of vaccination is exactly the same in *kind*—as it has long been known to be about the same in *degree*—as that of a first attack of small-pox.

Secondly, the "common-sense" argument in favor of vaccination will be greatly strengthened by the proof that we are not poisoning the blood of our children with a new disease (which some of the most vehement of the anti-vaccinationists maintain to be already destroying the vitality of the nation), but are merely imparting to them in its mildest form a disease which every one is liable, without such protection, to take at any time. Those who would hasten to protect their flocks and herds by Pastorian vaccination against a deadly charbon raging in their neighborhood—as who would not?—cannot, in common consistency, refuse Jennerian vaccination for their children.

And thirdly, we shall be furnished with the means of obtaining, at any time, an original stock of vaccinia, the continuous transmission of which through a succession of heifers will at the same time secure the maintenance of its potency, and exclude the chance of human contamination.

Among the numerous other researches now being followed out on the Pastorian lines, I may notice two as likely to prove of the highest practical importance: those which, in the hands of Drs. Klebs and Tommasi Crudeli, seem likely to demonstrate that *marsh malaria* derive their potency from organic germs (an idea that singularly harmonizes with the *periodicity* which is the special character of the varied forms of disease they induce); and

those which, based on the original discovery of Villemin (in 1865) as to the communicability of *tubercle* by inoculation, are rendering it probable that this terrible scourge (including not only pulmonary consumption, but scrofulous disease in all its varied forms) really depends on the presence of a microphyte, which may be introduced into the body, not merely by direct passage into the blood-current (as in inoculation), but also through the alimentary canal, or even through the lungs. This doctrine, which was first advanced by Professor Klebs four years ago, has lately been the subject of most careful research by Dr. Schüller of Greifswald: who has shown that every form of tuberculosis can thus be artificially induced, the characteristic micrococcus spreading rapidly in the blood and tissues of the animal inoculated with it; and that if, in an animal so infected, any joint is experimentally injured, that joint at once becomes a place of preferential resort to the micrococcus, and the special or exclusive seat of characteristic tubercular changes—a fact of the utmost practical interest in its relation to human joint-diseases. Another line of inquiry which has obviously the most important bearing upon human welfare, is the propagability of the micrococcus of tubercle by the milk of cows affected with tuberculosis; a question in regard to which some very striking facts were brought before the Medical Congress by a promising young pathologist, Dr. Creighton.

Well might Mr. Simon conclude his admirable address as president of the Public Health Section of the Congress with these pregnant words: "I venture to say that in the records of human industry it would be impossible to point to work of more promise to the world than these various contributions to the knowledge of disease, and of its cure and prevention; and they are contributions which, from the nature of the case, have come, and could only have come, from the performance of experiments on living animals."

W. B. CARPENTER.

From Temple Bar.

THE FRERES.

BY MRS. ALEXANDER, AUTHOR OF "THE WOOING O'T."

CHAPTER XXIX.

THE brightness of this pleasant season was made infinitely more enjoyable by

the satisfactory tone of Randal's letters, and still more so by Jimmy Byrne's. Both were excited almost to eloquence by their admiration of some small Christmas gifts, the work of Grace's and Mabel's own fingers. Randal represented himself as the most careful and regular of young men, and requested his mother to send him no present of money, as, thanks to her previous liberality, he was still quite flush of cash. Moreover, further contributions from him had been accepted by the *Daily Bread*, and the *Galleon*, another new weekly publication of surpassing merit; he would post the numbers for his mother so soon as his lucubrations were printed. As yet the remuneration was trifling, but when better established the pay would improve; and perhaps, after all, he might before long be able to subsist by his pen. The office had changed greatly for the worse; old Cartwright and the manager had been downright rude and unreasonable of late. "Uncle Frere," he went on, "has, I fancy, heard of my small literary successes—or Max has, for Uncle F. is an ignorant old duffer—and they asked me to dine, both on Christmas and New Year's Day. I refused the first, for I thought it right to keep Christmas with Jimmy, who really has been uncommonly good to me of late; but when the second invitation came, I thought it better to go. It was not half so bad as I expected, for who do you think was there? Lady Elton and Darnell! She was looking uncommonly well, and made no end of inquiries for you. I gave a great account of all your doings—trust me for frothing up twopenny beer till it looks like Bass or Allsopp! Darnell was sulky, scarce spoke to me, and went away early. They say he is going to marry an earl's daughter—a widow and a great beauty. Lady Elton asked for your address; she was on her way to some grand house in the north. Max was most agreeable, and asked a great deal about you and the mother," etc., etc., etc.

These letters filled both Mrs. Frere and Grace with pleasure and thankfulness.

"If," thought the latter, "Randal can avoid drawing on my mother, I can make both ends meet, and get better music lessons for Mab; she begins to practise quite nicely."

It was, therefore, a very bright face that greeted Falkenberg, in the afternoon of the day these letters had been received, as he met Grace and her little sister in the market-place on their way to ask Cecilia Sturm to tea.

"Ah, mein gnädiges Fräulein! how goes it? I was going to your house, on the part of the Frau Oberst, to ask if the Frau Mutter and yourself will join her sleighing-party the day after to-morrow? See, here is her note."

"Thank you; I think it will be delightful. You will find my mother at home."

"But she will decide nothing without you—you are the supreme ruler; so, if you permit, I will turn with you and make my visit after—eh, Mab, my dear little friend?"

"Yes, come with us, du lieber Wolff!" cried Mab, delighted; and taking her hand, Falkenberg walked on beside Grace with the air of quite belonging to her, or she to him.

"See," said one of his brother officers to another, as they saluted in passing. "Herr Hauptmann is already assuming the rights of proprietorship. The little one clings to his hand as though he were her brother."

"And the fair Englishwoman (*schöne Engländerin*) has a large fortune—all these English girls have."

"I am not so sure."

"We have just met Falkenberg with Fräulein Frere," exclaimed Frau Major Schönfeld and her daughter, with one voice, to the Frau Bürgermeister, "and alone—that is, only with the little sister; and ach Gott! they were laughing and talking so fast and free."

"Theirs is the age for joy and laughter," returned the Bürgermeisterin, who, in spite of her aristocratic airs, had a kindly heart.

Meantime Grace and her companions walked gaily on, little thinking or caring for the comments of those they encountered.

"You are more lively than usual, Miss Grace," said Falkenberg, as they neared Frau Sturm's house; "gayer than I have seen you since that evening, now a month ago, when a sudden, mysterious shadow seemed to have fallen upon you. I remember it well, and I have racked my brain to account for it, especially as you always avoid the subject."

"Then I would give it up if I were you, Herr Falkenberg," she replied, smiling and coloring a little, as she always did when the topic was alluded to; for though the sharpness of the impression she had received had somewhat worn off, the feeling of distressed doubt had never quite left her, and she would have given much to have the question, "Guilty or not guilty?" answered anyhow. "To-day," she

continued, "I ought to look bright, for we have good news from my brother—very pleasant letters altogether!"

"Letters," repeated Falkenberg; "ah, and you might have had unpleasant letters that day. Tell me, dear Miss Grace, did the pleasant letters contain any tidings of Moritz—of our friend Balfour?"

"No, indeed," said she, laughing at the eagerness with which he pounced upon this inference; "none of us have heard anything of Maurice Balfour since we left Dungan. But some time ago we heard of our dear old rector's death. He was Maurice's grandfather, you know; and now, possibly, we may never meet again."

"Oh yes; he will return to Europe—he will come to see me; and then—he will see you."

The last four words, spoken after a pause, implied so much, that Grace frowned slightly; then forcing a smile, remarked,—

"I should have thought you superior to the vulgarity of thinking a girl cannot have a man friend—a real, frank friend."

"But I am!" cried Falkenberg, with unusual earnestness. "I do believe there is nothing so charming as a friendship—a real tender friendship—between a man and a girl of soul and noble sentiment."

"But you are my friend, Wolff—you ought not to have another," said Mab, clasping his hand in both of hers; "and Grace does not love you half so well as I do."

"That I believe," returned Falkenberg emphatically.

"At least, I do not express my affection so openly," replied Grace, with careless self-possession, which elicited an angry sparkle from her companion's naturally angry-looking eyes. "But here is Frau Sturm's abode," added Grace, pausing before the door; "you had better go and see my mother, and settle with her. I must see Frau Sturm."

"She may not be at home," said Falkenberg; "I will wait for a few minutes, in hopes of returning with you."

Fortune favored him. Frau Sturm was not at home, but her old servant was sure "the Cecilia might accompany the *kleine Fräulein*"; whereupon, to Grace's amusement, but more to her annoyance, Mab rushed out on the balcony, and screamed to Falkenberg, who was walking to and fro beneath,—

"We come, dear Wolff! we come!"

On reaching Mrs. Frere's residence, they found that lady, as usual, in a very becoming cap, conversing in the corridor

with a short, broad, bonny old woman in thick woollen garments, a closely knitted head-covering, tied under her chin, and a huge *Korb*, or kind of square basket, strapped over her back. Her skin was a marvellous network of wrinkles, and her kindly pale blue eyes were sunk and faded with age. This was the well-known *Bote-Frau* (messenger-woman) who every day, in storm or shine, trudged into Zittau and back from a village two or three miles beyond Dalbersdorf, calling there for parcels or messages. She was now the bearer of a note from Frieda, enclosing a pattern of wool to be matched, and despatched the next day. Grace kept the old woman till she had ascertained the proposed arrangements.

Need it be said that Mrs. Frere readily assented to join the sleighing-party? She had grown quite fond of society since she settled in Zittau. The rigid politeness, the distinct social laws of German society, forbade the sometimes mortifying, sometimes too flattering variations of courtesy and observance which result from our freer and more republican institutions. Moreover, as well-born, well-bred, and connected with a Saxon family of good standing, the new-comers were considered valuable additions to the best circles of the little border town.

"I suppose Frau Alvsleben and the girls are coming?" said Grace.

"Oh yes; we are to drive to Friedland, Wallenstein's place; dine at the Restauration there, and return by torch-light."

"Then, mother, had we not better write to Cousin Alvsleben, and ask if any of them would like to come in and sleep here to-morrow?"

"Yes, dear; and send the note by the *Bote-Frau*."

"One point I have left unsettled, Miss Grace," said Falkenberg, drawing a chair beside her writing-table—"you must promise to be my partner. In these sleighing-parties, you know, men choose partners as in a ball! and I have a capital horse. I will keep you ahead of the party." He looked eagerly at her while she hesitated.

"Thank you; if such is the custom, I shall be very happy," she returned slowly, vexed to feel that her cheeks would flush under his bold eyes; "but where is my mother to go?"

"Mrs. Frere is invited to take a seat in the Oberst von Ahlefeld's sleigh. The married ladies and chaperons all go in the *Zweispanner* (two-horse) sleighs. And

in talking over the matter with the Frau Oberst, I bespoke you —"

"Ah!" interrupted Grace, "was I to have no choice in the matter?"

"Whom would you choose? Sturm is not invited; such trifles are beneath the dignity of so great a philosopher!"

"But the doctor is as bright and agreeable as the most trifling amongst you."

"Do you then refuse to be my companion?"

"No; I am sure you drive well, and —"

"If we are overturned, I shall be sure of help if you are with me," interrupted Falkenberg, smiling. "The days lengthen already; in a few weeks we shall be able to ride again."

The day fixed for the sleighing-party was an ideal winter's day. A bright sun, clear cold blue sky, crisp dry frosty air, the trees jewelled with sparkling frozen snow. The holidays were over; and every one going about his or her business, gave renewed cheerfulness to the picturesque streets.

Of the Dalbersdorf party, only Frieda appeared. She brought the somewhat startling news that Frau Alvsleben and Gertrud had gone that morning by an early train to Dresden, where they generally paid an annual winter visit to a relative of the late Alvsleben.

The party assembled at Frau von Ahlefeld's house, where seven one, and six two-horse sleighs were collected, besides an extra large one, which contained several of the best musicians from the regimental band.

Falkenberg was among a group on the doorstep, laughing and talking with some of the younger ladies, when Mrs. Frere, with Grace and Frieda, came up. He did not immediately join them; but on a movement being caused by the Frau Oberst coming out to assign places to those who were to occupy the larger sleighs, he turned to Frieda, and exclaimed, —

"So my aunt and Gertrud have gone to Dresden."

"How do you know?"

"Ah! everything becomes known as soon as it is done."

"Ach, Wolff! but Ulrich wrote to thee. He knew of the invitation before we did."

Falkenberg only smiled, and proceeded to pay his respects to Mrs. Frere with the air of profound deference he always assumed towards her, and which helped to make him so great a favorite.

"Now, Miss Grace," he said, "you have greeted the gracious lady our directress, let me put you in my sleigh; you must be well wrapped up."

Falkenberg's was the smartest of the *Einspanners*, glittering with brass ornaments, and gay with colored tufts of horsehair, the arch which surmounted the horse's head thickly hung with tiny bells, the sleigh itself furnished with great wrappers of dark fur, *Fuss-Sacks* (fur-lined bags to put the feet in), and all appliances for comfort. A large iron-gray horse, already pawing the ground and trying to free his head from the man who held him, promised some exercise of Falkenberg's skill.

"This is a charming turn-out!" said Grace, looking at it admiringly.

"Have you anything to put over your head?" asked Falkenberg. "You will need it."

"Yes, Frieda made me take this" — a white, fluffy-looking, fringed scarf, which she threw over her sealskin cap, and tied loosely.

Falkenberg, having wrapped her up with the greatest care, took his seat beside her.

"Go," he said to his servant; "there is a place for you in the musicians' sleigh."

It had already begun to move off, and the man had a short sharp run after it.

The gray pawed still more impatiently, and tossed his head, but no one moved till the band had gone ahead, and, having left a proper interval between itself and the rest of the party, struck up a stirring gallop. Then away they went, bells jangling, metal flashing, tassels swinging, little boys shouting, and all, young and old, within hearing of the music running to see the sight — away, smoothly, swiftly, noiselessly, over the beaten snow. Nothing is more exhilarating than a sleigh-drive: the delightful motion — the sense of ease and lightness — the dry frosty air which is almost always its accompaniment — the consciousness of extracting pleasure from the stern, dreary death-grapple of winter's rule — all help to quicken the pulses, and give joyous excitement to the spirits.

For the first few minutes Falkenberg was silent, apparently occupied with his horse; but as they cleared the town he turned and looked steadily, critically, at his companion for a moment.

"I do not know which suits you best," he said abruptly, as if speaking to himself, "the glow of autumn or the snow of

winter;" and his eyes dwelt yet another moment on the face beside him, its rich yet transparent color heightened by the keen air, making the dark-gray eyes more brilliant; while the smiling lips grew still and grave, as they always became whenever Falkenberg allowed any expression of admiration to escape him, which he seldom did, albeit not a variation of the changeful countenance was unnoticed by him, — the eyes, that could be so frank, almost defiant, and then so shy and soft, or earnest and questioning, or mischievous and mocking; the smile, which was tender or scornful, or proud, or simply mirthful — he knew every mood, yet did not quite fathom the nature in which they had their source.

Grace was provoked to feel how much his words and look moved her. Distrust him as she would, her vanity was infinitely gratified by his admiration; and yet a dim instinct seemed to inform her that there was in it some element from which she shrank as not quite right, not worthy of her, and that her heart ought not to beat, nor her eyes to sink under his, as they did.

"Every one looks well on a fine, clear day," said Grace, turning away her head, "and every one ought to put on their best aspect for so delightful a *fête*. This seems a good horse of yours, Herr Falkenberg; have you had him long?"

"A couple of months. I got him in exchange for the brown, the one which fell with me."

"He holds his head well," said she critically. "I should like to take the reins myself, were it not so cold."

"Better not. When spring comes you shall drive him as much as you like."

They talked on easily of horses and the various small events of the Christmas festivities at Dalbersdorf, when, suddenly turning to her, Falkenberg exclaimed, —

"But it is unwise of you, my *Fräulein*, to encourage Frieda in her folly."

"What folly?" asked Grace, looking straight into his eyes.

"Well-acted innocence!" said Falkenberg, laughing. "Is it possible you think I do not see her whim for Sturm, and his presumptuous regard for her?"

"I see nothing to remark," she returned, really thinking the lovers prudent.

"Ah, Miss Grace, you would not allow yourself to be found out so readily! But the dear Frieda is simpler and softer; I shall be so sorry for her when the inevitable break-up comes. It is a trying affair,

this falling in love with the wrong person; and yet we seldom take to the right one — eh, my fair friend?"

"So it seems, according to books," was the guarded reply.

"My aunt and Gertrud would be furious if they had an idea that these excellent young people were preparing a cup of bitterness for themselves. Even the count, with all his kindness, would not like his granddaughter to make a *mésalliance*."

"But without admitting that your surmises are right," said Grace, her affection for Frieda keeping her unusually on her guard, "would marriage with Dr. Sturm be a *mésalliance*? He will be a distinguished professor, and the Alvslebens are not noble—they do not boast the magic *von*."

"No, but Frieda is far better born than Sturm; and the Alvslebens have been Gutbesitzers for—oh, for half a hundred years. Then she is very pretty, so soft and fair and graceful—like a white dove. I was rather in love with her once myself; now I have transferred my affections to"—an instant's pause—"Gertrud, and Frieda has bestowed hers on Sturm."

"In despair at your faithlessness, I suppose," said Grace drily.

"Exactly," returned Falkenberg, looking down at her with laughing eyes. "I see you are very discreet. Well, I shall be very sorry if Frieda makes trouble for herself. She will have but little fortune and should marry some rich landholder."

"If she likes him."

"Well, we must all make some sacrifice for our social position. Would you, my Fräulein, marry Dr. Sturm?"

"Yes," said Grace boldly; "if I really cared for him, and he was my countryman. He is admirable, and so clever."

"What!" exclaimed Falkenberg, looking sharply at her, "a proud girl of your wealth and standing marry a poor doctor in an obscure German school!"

"I am obscure enough myself," returned Grace, not heeding that he listened eagerly for her answer; "and as to wealth—I suspect Frieda has more than I have."

"Ladies do not want money," said Falkenberg in a complimentary tone. "But it is an awful business for a man to be poor."

"I imagine it is much worse for women, who have so few ways of making money," replied Grace.

But Falkenberg did not seem to hear her, and kept silence for some time, urg-

ing on his horse, as if he himself were haunted by unpleasant thoughts.

They had passed the sleigh with the band, but what little breeze there was brought the strains of a favorite waltz at intervals to their ears. The country was open, and undulating with distant pine woods, and a range of high mountains to the left. And as mile after mile was passed with scarce a sign of human life, Grace began to feel a slight sense of depression, as if all nature lay in its winding-sheet. After a prolonged silence, Falkenberg roused himself with an effort, and began to speak of Wallenstein and the Thirty Years' War, and soon was launched into an argument, Grace and he always taking opposite sides. However, the subject, with a few changes, lasted till they reached the *Gasthaus*, where Falkenberg, now quite himself, jumped out and proceeded to unroll and disentangle his companion from her voluminous wraps.

The landlord and a brace of smiling damsels ushered them into a large, low, well-warmed room, where a couple of large tables were evidently prepared for dinner.

"We are in capital time!" said Falkenberg, looking at the clock. "It's not bad to do four German miles in an hour and three-quarters. We shall be able to go over the castle before dinner. *Kellnerin*, bring me *Schnaps*! Suppose you and I go on and have the first look."

"No, no; I must wait for my mother."

"Here they all come," said Falkenberg, looking out of the window. "Herr Oberst with Mrs. Frere—they are great allies—the Frau Mutter and Herr Oberst! And Miss Grace, poor Frieda has fallen to the lot of little Heldreich!"

After the sleighs had been unloaded, and driven off to the stables, and the party had enjoyed the warmth for a few minutes, it was suggested by Falkenberg to inspect the castle before dinner, while the light was clear, and they started accordingly.

The snow was beaten hard on the roadway; the slight air that had added to the cold at the outset had fallen, and the perfect stillness made the short walk pleasant.

The colonel offered his arm to Mrs. Frere, and most of the older officers paired off in a similar manner with the chaperons and married ladies; but the young people walked free and separately.

"Come, Frieda," said Falkenberg, "let us see if the German Mädchen can out-

strip the English one. Which of you will reach the castle gates first?"

"Oh, I will back Fräulein Frieda!" said Lieutenant Vollmar, an admirer of hers, who had come late to the rendezvous, and having missed his chance of securing a partner, had been reduced to take a young cadet, son of the colonel, on leave for a family birthday festival, for his companion. He was now determined to cut out Von Heldreich if possible, and attached himself pertinaciously to the fair Saxon. Frieda looked pretty enough to excuse such an attempt. Her warm winter dress of dark cloth, and hat edged with sable, were peculiarly becoming to her.

"I ought to win," said Grace; "I am taller. Keep back for a moment, Frieda; we must start fair."

They were well matched; but Frieda was a more practised pedestrian, and to Grace's surprise won by a few yards; the result of the match being that they reached the gateway nearly a quarter of an hour before the rest of the party. Falkenberg, who knew the place well, acted as guide; and they proceeded through the newer portion of the stately residence of the great Glam Gallas family, whose ancestors acquired a large portion of the murdered Wallenstein's estate.

In the course of this inspection, the friends separated. All, save Grace, had visited the castle before. So Falkenberg naturally devoted himself to her service, in pointing out the various objects of interest; and when they again reached the great hall, none of the rest were to be seen.

"He was an extraordinary historical figure," said Falkenberg, speaking of the original owner, "and must have had a strain of insanity in his character. His belief in planetary influence, his faith in the good luck of certain friendships, like Piccolomini's, showed insufficient reason." Then, after glancing right and left, he opened the door of a room where there was a stove. "Come in here."

Grace walked to the stove, and tried to warm her feet against it.

"But reason or no reason," Falkenberg went on, after bringing her a seat, and then leaning his arms on the back of a high chair opposite, "some friendships are lucky—must be lucky. You spoke the other day of friendship between men and women. I have thought of your words ever since, meine liebe Grace—I mean Fräulein. Will you laugh at me if I say I want a friend?"

"Laugh!—no, certainly not; but I should have thought you had many friends."

"Acquaintances, comrades, pleasant fellows—yes; but a friend to whom I can speak my thoughts and reveal my inner self——" There was a pause. Grace did not know exactly what to say. She sat silent, her eyes raised to his with questioning expression. "Do not look at me!" he exclaimed hastily, "but hear! Will you be my friend—a real friend, to rejoice in my success (if I ever have any), to feel for my disappointments? I think you are strong and true! and we soldiers are very unlucky fellows in some ways," he went on rapidly. "We have small chances of making marriages of affection; our very laws compel us to be guided by sordid motives. If one is in debt—and we all are—there are no means of extrication save in a wealthy marriage, unless, indeed, one has a wealthy father, which few possess. To a man in this position—and it is mine—what a priceless boon is the friendship and sympathy of a high-minded, tender woman! It would be salvation, sweetest, fairest cousin! (You are a sort of cousin.) Have you the courage to undertake this friendship—friendship pure and simple?"

"The courage!" repeated Grace, smiling—"why courage? Is there anything so terrible in your life, Herr von Falkenberg, that friendship with you requires courage?"

It was an unlucky word he had selected. When first he began to speak, Grace, with the mingled conceit and generosity of youth, was thrilled with a desire to befriend and reform him; but with the expression "courage," came the recollection of the gossip she had overheard at the coffee *Klatsch*, which, though the sharpness of the original impression had been somewhat blurred, still dwelt in her mind.

Falkenberg in his turn was greatly surprised. He had fully expected a warm, nay, tender acceptance of the proffered friendship, and a gushing agreement to unalterable Platonic fidelity. The unexpected answer sent his mental thermometer down many degrees.

"Ah! there spoke the *practisch* Englishwoman," he said, with a slightly cynical smile, and drawing himself up: "No, liebe Fräulein! my life is neither better nor worse than my neighbors'. The courage I thought of was required for a very different reason, and required far more by myself than by you."

"Oh!" said Grace, catching a glimpse of his meaning.

"But, I must admit, I did not think you would have received a confession of my soul's need, which you alone could have drawn forth, with such cold, unsympathizing caution. Nevertheless, *ma belle*, I shall ever cherish a tender friendship for you, however indifferent *you* may be."

This was kindly and frankly said; and at the end he held out his hand. Grace felt dreadfully ashamed of herself. Falkenberg had never spoken in such a tone before, and she ought not to have nipped any good feeling in the bud; she put her hand in his readily, and said, in a softer voice and with downcast eyes, —

"I am not cold and unsympathizing. I like you; I always did, and I will be friends with you with all my heart; only" — a sudden upward laughing glance — "take care of your own courage, and I will take care of mine!"

"Good!" returned Falkenberg, pressing her hand tightly; "I had need do so. And now we will trust each other, and thou wilt tell me thy griefs and joys; and when alone thou wilt say *Du*, wilt thou not?"

"No!" replied Grace sturdily. "If I do, I shall forget, and call you so always. Let us leave *Du* alone."

"Ah, prudent one, you will be strong as well as kind; you will give me good counsel. It will be a new delight to think that you will care for me and feel with me till some more favored and fortunate fellow comes, and then —" He stopped, and added, almost in a whisper, "How I shall hate him!"

"And when you meet that well-dowered wife who is to share your existence," said Grace, smiling pleasantly, and succeeding with an effort in withdrawing her hand, "I hope *she* will not hate me!"

"No, no; you do not understand the nature of our German women. She will love and reverence you as the helper, the purifier, of her husband's otherwise lonely life."

"I wonder," said Grace, half to herself, while a very mischievous smile quivered in the dimples which lurked about her mouth; "I wonder if my future 'spouse' is undergoing a preliminary course of ennobling friendship at present; because, somehow, I would rather not."

"You are mistaken," said Falkenberg, with unusual earnestness; "true friendship with a high-minded woman makes a man more worthy of love."

"No doubt you are right!" exclaimed Grace. "I am at times too much inclined to see the ridiculous sides of things; forgive my levity, and let us be fast friends. I like you so much when you are in earnest, and I am sure you could not be heartless or false!"

"Ha!" cried Falkenberg, struck by her tone, "some one has been traducing me to you!"

"No, no one, I assure you," returned Grace quickly.

There was no time for more; the sound of voices and feet approaching echoed through the vaulted hall, and Falkenberg, going to the door, met Frieda and Vollmar, who were laughing merrily at having given Von Heldreich the slip in the long passages.

The dinner was a scene of joyous confusion, hearty, honest laughter, noisy good-humored talk, as is usual on such occasions in Germany, Falkenberg being the gayest among the guests. The Oberst von Ahlefeld, the leader of the party, was a gallant veteran well versed in such duties. He was a Hanoverian who, like many of his countrymen, entered the Saxon army after the fatal victory of Langensalze, that they might fight for Germany and yet avoid direct service with the hated Prussians. Speaking French and English well, and, as Hanoverians usually are, more a man of the world than the generality of Germans, he always showed marked attention to Mrs. Frere, who soon discovered they had many mutual acquaintances in those past happy times when, wandering with her husband from one pleasant Continental town to another, life had been a long holiday. The Frau Oberst, too, had been much at the court when Hanover had one, and had there known many English, some of whom she had visited in their own country; she was, consequently, always pleased to meet English people, though her knowledge of English was very limited, and an intimacy was rapidly growing up between the families.

Mrs. Frere's gentle vanity was comforted by these attentions, and Grace marked with heartfelt pleasure her mother's brightened looks, and listened to her low, well-bred laugh. Yes; it was well that they had made this bold step, and ventured into the unknown land; yet even while she thought so, her heart yearned even to London, to see Randal and dear, kind, wise Jimmy Byrne. The tears absolutely stood in her eyes as she conjured up their faces; for just then they had

risen from table, and Falkenberg having begun a fine stirring *Soldaten Lied*, the rest joined the chorus, and the strain, full of a proud melancholy, touched her almost to melting as she gazed through the window of the large, low room across the wide stretch of snow, through the softly deepening night shadows, far away to the places and people she had loved and left. It was curious how clearly she seemed to see Max—Max of whom she had not thought for months. His dark, well-cut face and deep eyes, which had first taught her that she was a woman, came back to her vividly; for an instant she felt an intense pang of longing to see him again—not the Max of London, but the observant, sympathetic Max of Dungar.

"Meine Liebe, thou art thinking sad thoughts," whispered Falkenberg, suddenly startling her into consciousness. She saw the tables were being cleared and carried away, and that the bandmen were coming in.

"The sleighs will not be ready for another hour," said Colonel von Ahlefeld, coming up to Grace, "and we propose to occupy the time by dancing. May I have the honor, mein gnädiges Fräulein?"

Falkenberg stepped back with a smile, slightly raising his eyebrows; and Grace, her thoughts directed to a new channel, was soon among the dancers.

"Do not let us have torches," said Falkenberg, as they all stood ready to depart; "they are only an incumbrance. Let us keep near the music, and we shall have the light of theirs. Frieda, you go with Vollmar; let us start together."

The four friends slipped away, Grace first telling her mother that they were going, and so secured their place at the head of the procession. The start and homeward progress were very effective. The horses were eager, the music inspiring, the various lights and shadows thrown by the torches weird and fairy-like; the smooth snow made the gliding motion positively luxurious, and a splendid moon turned all beneath her beams into silver.

"It is a sin to sully so pure a light with the glare and smoke of these torches," exclaimed Falkenberg, looking up into the blue blackness of the sky. "We will pass the foremost sleigh, and get away into the moonlight." So saying, he turned and called to his lieutenant: "Vollmar, we go on in front; follow straight to Bergstrasse."

A touch of the whip, and they spun on at a swinging pace, past the musicians'

sleigh, and soon nearly out of hearing of the occasional louder swell of the music.

"Is it not delicious—the stillness and lovely light?" said Grace.

"Yes; and still more delightful to be alone with thee, sweet friend!" cried Falkenberg, who was in the highest spirits. "Now, tell me the secret of these sudden shadows, which sometimes fall upon thee. I have ever noticed them. That first walk with thee—how well I remember it!—when we stood on the Oybin, and those great soft eyes of thine gazed dreamily away into a distance of which I knew nothing; then my soul was drawn to thine, and I felt I had found such a friend as I had always sought. Now, this evening I watched thee, and saw those eyes fill up, and felt that in spirit thou wert far away. What is thy heart's secret, meine Liebe? Tell me, and then I will tell thee some of my troubles."

He spoke in German, as he almost always did of late, even when she replied in English, and the tender *Du* fell caressingly from his lips.

"I really have nothing to tell," returned Grace simply. "I am away from my old home, and my brother, and all that was dear and familiar to me, so it is natural that I sometimes, nay, often, feel a vague sadness—an indefinable sensation; but I have only to think resolutely for a few minutes, and it disperses. We are really very happy here."

"Ah, your confidence may be won—I see it is not to be had for asking," said Falkenberg, looking kindly into her eyes. "Tell me about your brother."

But soon he contrived to turn the talk upon himself, his early days, his first military experiences, confessed many boyish follies of a pardonable and even lovable type. Indeed, a novelist need not desire a more interesting, piquant, and attractive opening sketch of his hero's beginning than Falkenberg's reminiscences supplied. They were given, too, with the most charmingly frank, unstudied manner, and in a tone of brotherly confidence which set Grace quite at her ease.

Altogether the homeward drive was very delightful, and when they reached Mrs. Frere's house they were far in advance of the rest of the party.

"No," said Falkenberg, as Grace turned to say good-night; "I wait to say adieu to Mrs. Frere."

He sprang up-stairs after her, and hanging his great fur-lined coat in the corridor, came into the warm, well-lighted

salon, and assisted Grace to remove her wraps.

"And are the pretty little hands terribly cold?" he asked, taking them both in his.

"Not so cold as yours," said she, not liking to seem prudish by withdrawing them too soon.

"And now," he went on impressively, "we have entered into a solemn compact of friendship. See, I have told you much of my life; will you not also confide in me? You will, in your own good time; and I will be discreet. Only you must let me say *Du* when we are alone — alas! that is seldom. Yes, I will let your hands go so soon as you again promise to be my true and faithful friend."

"I will! I do!" cried Grace, disturbed and puzzled by this curiously un-English proceeding. Something in Falkenberg's voice and touch affected her strangely — vexatiously.

"You will understand me better ere long," continued Falkenberg, still holding her hands. "Now let me explain the laws of our sleighing-parties. On the return from these expeditions, each cavalier is entitled to a kiss from the lady he escorted. But *this* is all friendship dares to take," and he kissed the hands he held more than once with very friendly warmth indeed, and then let them go.

"I hear the sleigh-bells," said Grace, turning away hastily, and removing her fur cap to hide the quick bright color that would spring to her cheek.

"And our little hour is over!" cried Falkenberg, as he left the room to receive the fresh arrivals.

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SCHOOLS IN FLORENCE.

DURING a short stay in Florence I was glad to take advantage of an official permission, kindly given me by a member of the municipality, to visit the communal schools under his authority. The communal schools in Italy are analogous to our Board schools. Before the unity of Italy was established the municipality of Florence entrusted the elementary education of the province and city to a number of ministers of the Roman Catholic Church, who made themselves entirely responsible for it.

The schools they established were distinctly Church schools; they were a great improvement on the Jesuit schools which had existed previously.

When Italy was united a great change was made in the education of the people. The municipality itself undertook the control of the elementary education of the province, and opened numerous unsectarian schools for boys and girls; the Church schools were continued as mere private establishments, and command to this day the confidence and support of a large number of persons. The supreme central authority in education is the minister of public instruction; his jurisdiction extends throughout Italy and Sicily; he is assisted by a central body, whose powers are somewhat undefined and whose functions amongst others are to grant subsidies and appoint and transfer teachers throughout Italy. Each province has its local government inspector, appointed by the central board, who does not necessarily conduct examinations himself. There is also a municipal school council of six local members, presided over by the prefect of the province and a number of male and female municipal inspectors, who examine the schools and sometimes teach special subjects.

The schools are visited periodically by the authorities, and to judge by the entries in the register kept for the purpose the visitations are frequent. Women inspectors visit the girls' schools, and do their work efficiently.

There are about thirty communal schools in Florence; each is a school of only one department, that is, either for boys or for girls only; there are no communal infants' schools, and no mixed schools; the ages of the children range from six to fourteen.

Furnished with my letter and with a printed programme issued by the municipality to the teachers of Florence, containing a list of the subjects to be taught, the books to be used, a time-table, and a code of needlework, I paid my first visit to a girls' school in a central part of the town.

The simplicity of the whole machinery, as compared with the vastness and complication of our own, is very striking to any one coming straight from London Board schools.

Nothing brings out more strongly the fact that the principles of education and of its administration are seriously modified by a mere multiplication of the numbers to be educated. As regards instruction number makes all the difference between individual and class teaching; as regards administration, between individual supervision of each school by

persons locally associated with it, and legislative administration of general principles by a central body.*

In Florence the numbers are so small and the area covered by the work so compact, that the central body of the municipality is practically the local body as well; the members can and do possess a complete knowledge of the history of each of the thirty schools under their care. In London over three hundred schools must be controlled. As the area covered by the work equals some one hundred and fifty square miles, local knowledge and watchfulness over the history of each of the schools or departments is impossible. Besides this large questions of principle spring out of the mass of details and demand attention, and new educational problems present themselves which are unknown in smaller administrations. No system can be maintained in this vast chaos until and unless these more general principles are periodically grappled with and readjusted to the educational needs of the time. The whole question is, in fact, shifted from the personal and the special to the abstract and general. The London School Board, with its daily increasing accumulation of detailed work, is in this respect in a transition state, in which the energy and industry of its members have not yet been vanquished by the immense pressure of business, but in which the course of time alone must bring about a change of method. It may be anticipated that a carefully chosen body of local managers will ultimately be called in to take a more responsible share of the local work in connection with the schools than they do now, and thus relieve the Board to a certain extent of work which is unsuited to it.

The system of free education in Florence is a further gain in simplicity, to say nothing of more important advantages involved in this principle. It involves an absence of the worry caused to teachers, parents, and children by numberless regulations and circulars, which endeavor but vainly to secure the full payment of fees without interfering with the regular attendance of the children. The scholars pay for their own books and materials; in any cases of poverty the parents can claim assistance from the municipality, and no difficulty is made in granting the

necessary books to those who cannot pay for them.

The obvious advantage of this system over ours is that the weekly temptation of sending a child home for the weekly fee is removed, payments for books are secured at much greater intervals than payment of fees, and there is no excuse placed in the hands of unwilling parents and irregular children for non-attendance. At the same time there are other objections to the plan of payment for books which render it impracticable in London.

It may be remarked in passing that the objection to free compulsory education so often made, that it pauperizes the people, receives a flat denial in Florence. A permanent pauper or destitute class does not exist.

In 1859 a compulsory law was passed, but was subsequently thrown out. Every one was unanimous in saying that active compulsion was little needed. The people "are only too anxious" to get their children educated and pushed on; they are generally hard-working people, and glad to get their children out of the way during working hours. They take an interest in their progress at school and show the greatest pride in their success. The parents of many of the children scarcely know how to read and write, and look upon the modest educational achievements of their offspring as evidence of genius.

There exists no cumbrous machinery, similar to ours, of visitors and superintendents, of weekly meetings* for the purpose of investigating cases of neglect requiring a possible summons, or poverty requiring a remission of fees; of magistrates and police courts. If a parent is to blame the usual course seems to be for the teacher to communicate direct to the municipality, when inquiry is made and the parent is censured. There are some families which are hopelessly improvident, they become professional beggars, and their children go about in rags; but the number is too small to form a class, and even in this mild form compulsion is not applied to them. All the schools I saw were, as regards the condition of the children, on a par with our better schools, where the fee is fourpence or threepence; the children were well fed and clothed, and had a prosperous look.

I looked out everywhere for the poor children, and could not find them. I was

* The number of schools in Florence and the number of children receiving education is about equal to the number in the Westminster division of London, and represents one thirty-seventh of the whole work of the London School Board.

* In 1879 eight hundred meetings of this kind were held in London.

at last directed by a teacher to a suburban school, which I visited, where the condition of the children was less prosperous; some of them even wore ragged clothes. I was struck with the significance of the fact that I was searching for the destitute school population and could with difficulty find it. There is, in fact, no destitute population in Florence at all, as I have intimated. I was informed that the reason of this is that there are very extensive and well-organized charities in Florence which meet every case of want, and a model workhouse. I doubt very much whether charity, however well organized, ever achieved as much in preventing destitution as habits of industry and providence, and I am inclined to believe that the latter, far more than the former, is the cause of the prosperity of the lower classes in Florence.

All the schools I visited were carried on in vast buildings which had formerly been convents or monasteries; being the property of the town, they are now put to this, more noble, use—and, contrary to my expectations, they answer very well. When liberal funds are not forthcoming from the government, and school buildings have to be erected, the first thing that suffers is the accommodation, which has to be cramped and unhealthily restricted to meet the necessity of economy. As regards Florence, financially ruined by expensive improvements, it is fortunate indeed that these large and airy buildings are available; the schools enjoy the advantage of a wealth of space which is truly enviable, even when compared to the generous scale adopted in London.

These convents have generally been built round large, open courtyards, with long, covered-in passages, or open corridors, into which rows of class-rooms open. The class-rooms are always lofty, cheerful, and dry, lighted by large, wide windows. The size of the rooms varies very much; sometimes a teacher can take her full number (seventy) of pupils, but my impression is that the rooms generally hold thirty or forty. In the first school I saw there were ten teachers and two hundred and fifty children; this liberal staff was necessitated by structural conditions. None of these buildings had fireplaces or heating apparatus of any kind; the winter was considered cold and wet, yet every class-room I entered (about fifty or sixty) had a window wide open, and I never found a room close or ill-ventilated. It is a well-known characteristic of the

Florentines of all classes that they live in cold houses, are not afraid of fresh air, and keep themselves warm by extra clothing. The teachers all carried muffs or *scaldini*—small earthenware pots full of hot embers—for warming the hands. The school premises were well provided with every convenience, and kept very clean; but the washing apparatus was quite insufficient.

Besides giving the ordinary instruction, the teachers are responsible for the registers of attendance and the progress and general conduct of the children; they must also watch their personal cleanliness and neatness.

The relations between teachers and children were satisfactory; discipline was maintained without difficulty. Corporal punishment, extra lessons as punishment, and harsh words are forbidden.

The salaries vary from 28*l.* to 48*l.* per annum without residence; these figures speak for themselves. Though much has been done in Italy since 1859 for education, much remains to be done, and some very elementary principles have yet to be applied. It is impossible that even in Florence any person can live on the salary offered to teachers; they are all obliged to supplement it by private tuition. Ultimately the position is reversed—private teaching takes the primary, and the school the secondary place; necessarily so, since the remuneration of the former depends on its excellence, and the latter is a fixed income.

A teacher, whose duties were exceptionally fatiguing and involved great physical exertion, told me that her health suffered from the inferior quality of the food to which her small salary obliged her to limit herself. There can be no doubt that any reforms or improvement in the education of the people of Italy must be preceded by a reform in the payment of the teachers.

The first school I saw was situated in an immense building in a central part of the town; it was formerly a convent. No less than four distinct schools, numerous offices, and a large church are now located under one roof. I ascended an interminable staircase, and found myself in a bright, sunny anteroom, hung round with cloaks, and hats, and baskets containing the children's dinners. Two female attendants sat sewing and gossiping. I looked down from the wide-open window into the busy street far below, which was stirring with life and color, the air filled with cheerful sounds, street cries of fruit

and flower sellers, children playing, and soldiers marching past.

I could not help picturing to myself the possibility of some poor little nun imprisoned perhaps against her will in former times in these convent walls, and looking down on the busy scene below with the natural longing of a healthy nature to escape from the dull routine and aimless duties of the convent, and to join in the real work of the world which lay at her feet.

Happy indeed is the change which now fills these rooms with bright, merry children, which prepares them for the ordinary duties of life, and leaves them free to follow the impulses of industry and energy which are so characteristic of the Florentines.

The attendant soon brought the head-mistress. She was a highly intelligent woman of about fifty, with shrewd common sense; her manners were easy and unassuming, her remarks full of that wonderful Italian sagacity which makes vulgarity and ignorance seem impossible; there was an under-current of *bonhomie* and humor which made her a very interesting companion during the two mornings that I spent in the school. She was much interested in the general development of education in Italy, and, like all Florentines, showed a keen appreciation of public questions and politics which surprised me. I remember noticing the earnest voice, and look of pain that passed over her face, when she alluded incidentally to the depreciated currency of the country. In many countries a woman in her position would not have understood what a depreciated currency meant; to her it was a personal disgrace. Italian patriotism makes not only warm hearts, but also clear heads.

Each school is divided into two parts, called the lower and higher sections: the former consists of one class, the latter has five; so that a child entering school at six years of age would have eight years in which to pass through the six classes or standards of the school.

The children are separated into classes according to the standard of attainment of each child; arbitrary standards of age are universally ignored; so that backward children of ten or twelve are found in the lowest classes, and *vice versa*.

No child can pass from a lower class to a higher except after examination at the end of the school year.

Infants under six are excluded from the communal schools; they can gain admis-

sion into the *asili*, but these are intended to provide education (and free dinners) for a distinctly poorer class than that which fills the communal schools.

If a child of six enters school not knowing its letters, it would be expected at the end of the first year to know how to read words of more than one syllable from books printed with syllabic divisions. It begins with writing in copybooks, and dictations of short easy sentences; it learns the first part of the catechism, with prayers and sacred history, also numeration, and addition and subtraction of sums of three figures. It learns the nomenclature of the principal parts of the human body, the days of the week, and the natural products of the country from picture-books. I saw no object lessons given anywhere.

One of the teachers, with evident pride, pointed out to me several small children who have learned to read in one year. I remembered a teacher in London who said that if she took eight or ten little girls together she could teach them to read words of one syllable in six weeks without difficulty.

The writing was a weak point everywhere; considering the natural aptitude of the Florentine people for all the arts which require manual dexterity, I am inclined to think that the method of teaching must be at fault; the copybooks used were of very poor quality.

In the second class the child continues the same subjects, and also learns prose or poetry by heart; this was always monotonous and sing-song. Grammar is commenced, and arithmetic carried on to multiplication of two figures.

In the third class composition is taken as a new subject, and arithmetic carried on to division. I heard some very young children in this class read a difficult passage exceedingly well; their logical analysis was good, and some of the writing excellent.

In the fourth class grammar is entirely replaced by composition, simple geometrical definitions are added to arithmetic, and geography is taken as a new subject.

In the fifth class Italian history is taken as a new subject, arithmetic carried on to fractions. Two little girls of nine read and analyzed well. They had worked up through the lower classes of the school. Finally, in the sixth class the above subjects are continued and perfected.

There is no equivalent to our fourth

schedule, which supplements the work of standards four, five, six.

Out of the ten subjects,* any two of which may be chosen and taught in England, none is attempted in Florence. The consequence is a certain baldness and monotony in the character of the work done. A question I often put, "What is the favorite study of the girls?" always received the same answer, "Arithmetic; they would rather have a problem in arithmetic than a story from history."

The boys preferred history to any other subject, and, according to the male teachers, did not succeed so well in arithmetic as the girls.

An immense step has certainly been made in education since 1859, when all schools were brought under government control and girls were admitted to school.

It then became illegal for any one, private or public, to teach without a diploma of efficiency from the government.

There is a very general feeling of self-congratulation at the results achieved, which is perhaps natural, but, I think, premature. The results as regards *instruction* or knowledge acquired are small, and wanting in completeness; they even show a certain slovenliness of method. Any quantitative comparison is difficult to obtain, and may be very misleading, but estimated roughly, the results must equal about two-thirds of the work done here.

Considering the previous conditions and the difficulties to be met, perhaps more could not have been achieved in the time. But if the efforts of the government are continued, and improved methods further adopted, in the course of time there is no doubt that, owing to the superior intelligence of the children, results might be achieved which would far surpass anything that could be hoped for in England. The methods there are inferior to ours, but the material is better.

A very serious obstacle in the way of improvement is the frequent change of ministry; it is a great drawback, and seriously interferes with the continuity of educational progress in the country. If the children of the Florentine schools are behind those of our London Board schools in acquired knowledge, the case is reversed when we come to educational results as distinguished from mere instruction.

* English Literature, Mathematics, Mechanics, Animal Physiology, Latin, French, German, Physical Geography, Botany, Domestic Economy.

If the primary object of education is the cultivation of the thinking powers, then the children there start at a great natural advantage over the children here. While the Florentine teacher has merely to give instruction, and very simple mental and moral training, to the child who is in a fit condition to profit by it, the London teacher has not only to give the training, but also in many cases to create or awaken the mind and the moral nature that is to be trained.

At bottom the difference is one of national character and climate. The Florentine children are more intelligent and brighter (not sharper) than the London children. The thinking faculty is there and at work from the earliest years. The persevering stolidity of the London child is accompanied often by a precocious knowledge of evil which is not the most promising material to put into the hands of a teacher. There the children are already little human beings, and there is a certain relation between their intellectual condition and the civilization of the state they inhabit.

Here it is otherwise; many of our poorest children are little savages whose mental and moral state is out of all proportion to, and completely anomalous in, the life of civilization which locally surrounds them, but which actually intensifies their miserable state; and even our better-class children have not the clear, bright intelligence which a better climate seems to produce. The difference is clearly and sadly illustrated by the place which the question of corporal punishment occupies in the two countries. Let me describe what I saw.

The natural curiosity and interest which I felt in first entering a class-room of Florentine children was met by a look on the faces of the scholars so clear and unmistakable as to draw from me the exclamation, —

"How happy these children look!"

I turned to the teachers, and saw the same gentle, unruffled look reflected in their faces. One of them replied, —

"They are very good children."

Suspecting that such general equanimity could only be purchased by laxity of discipline in some form or other, I asked,

"Do you ever punish them?"

Her face became ominously grave as she answered, "Oh yes! sometimes we must." I expected a birch rod at least.

"How do you punish them?"

"I give them a bad mark."

I looked incredulous.

"It is felt to be a great disgrace," she added.

"What do you do if a child tells a lie, or steals?"

"I separate it from its companions, or keep it in for a few minutes, or perhaps I write to the parents."

"Do you never beat them?"

"Oh never! the child would become perfectly unmanageable, and I should lose all my influence in the school, and discipline would be destroyed." The explanation which I received to this astounding statement was that it was the rule to make punishment *moral*, and that the disgrace of a bad mark had gained such a hold on the children and their parents that it was found sufficient.

I objected that Italians are notoriously high-spirited and fiery.

The teacher replied, "Corporal punishment would develop all the bad qualities of a child, and it would become perfectly uncontrollable and wild. It is never done."

One teacher boxed a child's ears, and received instant dismissal from the municipality, on the grounds that by this act she had forfeited her influence over the other children, and her power of controlling the school.

The impression I received in this school was confirmed by every fresh visit I paid to boys' and girls' schools in Florence. It was impossible not to ponder over so significant a fact. Besides the difference in the national character of Florentine and London children, there are two things to be taken into consideration. In the first place, the teachers and children are not ceaselessly worried by ever recurring, and, I was almost going to add, ever useless examinations. They have the one general examination at the end of the school year, which embraces every subject, and upon the results of which depends the work of each scholar during the ensuing year. Once it is over, children and teachers may forget examinations, and with free and happy minds think something of education, and of training of mind and character.

Our children have besides, (1) the government examination; (2) School Board examination; (3) needlework; (4) Scripture; (5) drawing; (6) physiology; (7) drill; and so on, *ad nauseam*.

Under these circumstances, education is hurriedly relegated to the top shelf of a dusty cupboard, because one examiner is following quickly upon the heels of another.

The natural friction of school life is

intensified, teachers are worried and children are impatient—in these conditions the temper of a school is not calm, and constant outbreaks must occur.

But there is another difference. In Florence, I believe in north Italy generally, the children are kindly treated by their fathers and mothers, and when they go to school they only understand kind treatment; the teacher's course is clear enough; in refractory cases he has his moral influence to fall back upon, and he finds this fully sufficient.

In England the lowest class of parents beat and cuff their children at a very early age. By the time a child is old enough to go to school, its moral sense is dead, and the teacher has at the same time to maintain discipline and to reawaken the lost sense which may respond to his moral authority.

The task is difficult, but not so hard as at first sight appears, and it is certainly worth the sacrifice of time and patience. As regards the parents, the question, Where is reform to begin? is answered. We venture to think that it has begun in the only place possible. If the mothers and fathers are originally to blame, we must educate those who are one day to become mothers and fathers to a better state of things.

It is a gradual reform which can only be introduced in the schoolroom, and by the action of those whose responsibilities in this matter are undoubtedly grave.

Let it not be imagined that sudden or universal cessation of corporal punishment is advocated—any such action would be fatal.

The *ultimate end* to aim at is the abandonment of corporal punishment, but the means to it is not by a sudden change. This can only be brought about gradually; it has, happily, already commenced in some of our best schools. All honor to those teachers who can carry on this difficult task with success. It is, in fact, conceded by those who advocate very strenuously the necessity of corporal punishment, that in proportion as a teacher can educate his or her children and maintain discipline in his school without it, so is he morally superior; the better the teacher, the less he will require to fall back upon corporal punishment.

Every teacher, male or female, who receives a certificate from government, has to pass an examination in gymnastics. Government holds annually a preparatory course during three summer months, which is advertised as the *Scuole Magis*

trale di Gymnastica Fiorentina. So strenuously is this regulation carried out, that even the nuns who teach in the convent schools are obliged to come out of their seclusion to follow this course, and obtain a certificate after due examination. The Swedish exercises, which are now being used in the schools of the London School Board, have been introduced in a modified form; they are excellent, and very popular with the girls.

The code for needlework is exceedingly complicated, and almost useless for domestic purposes. So much is this the case that the communal schools might be properly called industrial schools for teaching needlework, where some general education is also given. In the junior classes, needlework occupies *nine and a half hours* per week, reading five hours, writing three hours and three-quarters, arithmetic three hours and three-quarters. In the senior classes, needlework occupies *ten hours* per week, reading five hours, writing three hours, arithmetic five hours. There are six classes: the children begin by knitting strips, plain socks, and crotchet lace; in class three they begin hemming towels and handkerchiefs, marking, and making simple garments. In the fourth and fifth classes they make elaborate garments of every kind; and finally in the sixth they do fine white embroidery. The cutting out is all done by the teachers; the one-thread system reigns supreme. For the enlightenment of those persons who are not initiated into the mysteries of the one-thread system, it may be explained shortly as follows:—

If I am teaching a child to hem in the ordinary way I turn down or fold the material, judging of the straightness and evenness of the folds by my eye. I commence to hem, judging of the regularity of the stitches again by my eye. I show the child how to make the stitch, and endeavor to train the child's eye to judge of her own work by making her glance over what she has done, and point out to me where are the irregularities and imperfections of her stitches. There is no rule of thumb here, but a gradual training of the hand, and of the eye to command the hand. If, on the other hand, I adopt the one-thread system, I turn down the fold, guided not by my eye, but by single threads of the *material* which I choose as my lines. These threads are more or less indistinct according to the quality and kind of material used, and always require a certain amount of painful ten-

sion and straining of the muscles of the eye to follow them. When I show the child how to do the stitch I have to abandon all idea of training hand or eye; she has instead her rule of thumb, which is to take up with her needle merely the single threads which have been the guide in making the folds. The stitch is formed by bringing together these two threads.

If it is fatiguing to the sight to fold on this system, much more fatal is it to hem—to stitch together for perhaps an hour at a time two single and almost invisible threads of some material. It is not easy to imagine an invention less calculated to benefit a single creature and more calculated to destroy the exquisitely delicate mechanism of the nerves and muscles of the eye.

When I asked what was the use of it, the invariable answer was, "*Précision.*" This "*précision*" is a necessary training for the fine white embroidery.

In some of our London schools, where embroidery is not permitted, this system is pursued, but it is entirely discouraged by the London School Board.*

Besides the thirty-four stitches which the English code requires, and which is in itself the complete art of plain needlework, the Italian code gives sixty-six different articles to be made, and each child has to master altogether sixty-eight different stitches.

In company with one of the inspectresses, a very amiable and eloquent cicerone, I visited one of the Scuole Leopoldine. There are six or eight of these schools in Florence. They were established and endowed by King Leopold X. for the purpose of providing girls with industrial training in needlework and silk-weaving.

Many marvellous things in the way of needlework are to be seen here, but none more marvellous than a framed picture of some saint. The foundation was white muslin, and the design was produced by means of stitching in human hair instead of black silk! The poor woman assured me that this work was *très pénible*. In one room an inferior quality of silk was being woven on looms, in another girls were winding silk by machinery. Downstairs fifty little girls were learning how to make crotchet lace, squares, and mysterious ingenuities of many kinds. Upstairs about the same number of girls were doing very fine white embroidery all

* These remarks apply equally to the two-thread system, the principle of which is the same.

on frames, such as the nuns make in France. So purely mechanical had this art become, that when, in the hope of finding one educational feature in the school I inquired whether the girls drew their own designs, the inspectress was much shocked, and replied that even she did not attempt it.

The embroidery was quite perfect of its kind, and quite useless. As the *raison d'être* of these five or six schools was to supply a means of livelihood to women, I was curious enough to know how far the end was achieved. A very fine and beautiful handkerchief was shown nearly finished. I asked, "How long has it taken you to do this?" "One year of constant work." "What will you get for it?" "Fifty lire." Less than two pounds for a year's work!

As a matter of fact, there is no general demand for highly-finished work in Italy, nor indeed in any country I have visited. It has become the luxury of the few rich ladies who will not wear any but the finest work, and who create a special but very limited demand for it.

F. HENRIETTA MULLER.

From Temple Bar.

PERSONAL REMINISCENCES OF LORD STRATFORD AND THE CRIMEAN WAR.

BY THE AUTHOR OF THE "FRONTIER LANDS OF THE CHRISTIAN AND THE TURK,"
"RAMBLES IN SYRIAN DESERTS," ETC.

THE BASHI-BAZOUKS.

BESIDES the twenty-five thousand men of infantry and cavalry enrolled in the Turkish Contingent, a corps of four thousand irregular cavalry was raised and attached to that force. It was placed under the command of the late General Beatson, who had held similar commands in India with great distinction. It turned out, however, that the Turkish character being new to him, he made a few mistakes in dealing with it, which afterwards rendered it advisable to supersede him.

They were really somewhat unruly, those Bashi-Bazouks. They would go into the bazaars at the Dardanelles, where they were first stationed, and take what they wanted without paying for it. Remonstrances on the part of the shopmen would only give rise to abuse and violence. The Turkish governor complained of this to the Porte, and his complaint was forwarded to Lord Stratford.

The ambassador wrote to General Beatson, requesting him to make full inquiries into the alleged misdeeds, and to punish those of his men who might be found guilty of them. The general addressed an official letter to Lord Stratford, stating in reply that he would make full inquiries, and that if he found any of his men guilty of such misdeeds, he would hang them; but that, on the other hand, if he found no one guilty of them, he would hang the Turkish governor. No one who knew Lord Stratford would be at a loss to understand the effect that such a communication would have on him. He seemed frantic with rage. One of those in whom he placed confidence was suddenly sent for. When he arrived, the official letter was placed in his hand without a word. He read it with amazement, and, before he knew where he was, the ambassador ordered him to go on board a man-of-war with a requisition for an immediate passage to the Dardanelles.

"But, my lord"—he ventured to say, in the hope of being instructed how to act.

"Make no objections. Go you must," was the peremptory interruption.

"What am I to do there?"

"Let me know the truth without a moment's unnecessary delay. Go. Good-bye."

He went and found the truth to be as the Turkish governor had stated it. Indeed, that functionary might have represented it in stronger terms without compromising his veracity. Since then matters had become even more serious. Some of the Irregulars had shot a Turkish officer while he was attempting to make them keep the peace. The man had not died of his wound, but it was a severe one, a ball having passed through his thigh. An abominable outrage had also been committed by four of the troopers, who had consequently been made prisoners by the English colonel of their regiment. The squadron to which they belonged galloped to the general's quarters, and demanded that the culprits should be released, promising that they should conduct themselves to his perfect satisfaction in future if he would forgive them this once. The general agreed to this condition. The four men were handed over to the squadron, which deserted at once in a body. The general rode after them, and advised them to return. They objected that he might punish them for deserting. He gave his word of honor that he would not do so.

They required from him a pledge that he would keep his word. He unbuckled his sword and handed it to them. They all rode back to camp together in high spirits, and he afterwards boasted of having become the "darling of the Bashi-Bazouks."

Perhaps he had. General Beatson was a man who would have led his division against any odds with the utmost bravery and military skill, but he did not comprehend the Turkish mind, which classes kindness and indulgence as conscious weakness, and respects nothing but power.

General Smith, who succeeded to the command by being transferred from the regular to the irregular cavalry of the Turkish Contingent, was a man of a different stamp. He was wedded to all approved army maxims and traditions, having been colonel of one of the finest regiments in the British army, the 15th Hussars. These rules were fearlessly applied to the Irregulars, who were soon brought into good working order by public floggings in all cases of insubordination. He was also a very kind-hearted man, greatly liked by all who served with him, utterly incapable of hurting any one, full of high principle, and a sincere Christian. He had withal a fund of subdued mirth. The surface comedy of human life, not its hidden pathos, impressed him most vividly, and his reproduction of it was not unaccompanied by real wit, which was the more amusing on account of his not laughing himself. His fun never degenerated into buffoonery, and mixed with it, like warp and woof, was an inexhaustible store of benevolence and good nature. He was "a fellow of infinite jest," but he never even smiled. His lugubrious countenance, with the sepulchral tone of his voice, pitched in a plaintive minor key, had given him the nickname of "the man that killed his mother." But a better man, and a finer cavalry officer, never lived.

His aide-de-camp, a lieutenant of the 15th Hussars, was a great favorite with him, and most deservedly so; but the too persistent bias he displayed for leave of absence caused a frequent struggle in the general's mind between his strong sense of military duty and a friendly wish to let the young officer enjoy himself.

"Well, Stewart," he said in the orderly-room one day at the Dardanelles, with a countenance full of melancholy and a sad sobbing voice, when his aide-de-camp presented himself after a long absence from headquarters, "have you come for more leave?"

"No, sir," replied the youth, smiling involuntarily, "I have come to report myself returned from leave."

"Oh, very well, then you do not want anything?"

"Yes, sir, I do want something."

"What is it, Stewart?"

"I want a wiggig, sir."

"What for?"

"For outstaying my leave, sir."

"Very good. I am busy just now. Sit down there, and I will give it you presently."

All this was said with such a mournful expression of face, and in so very heart-rending a tone of voice, that I had some difficulty in keeping my countenance becomingly serious.

Some of the English officers, both of the regular and of the irregular divisions of the Turkish Contingent, were elderly Indians with disordered livers, who had long since dropped out of harness, and had been buried in their clubs, to be dug up and sent to command Turkish troops. Others, still young, were so given to bluster and "behawdering," that Mrs. Quickly would certainly have objected to such "swaggering companions." The War Department did not seem to have a very exalted notion of the qualifications required for officers, in the Irregular Cavalry especially. It is said of the clerk in charge of the interests of that branch of the army, that one of Poole's people went to him with a request that an officer of it should be compelled to pay his bill, and that the following conversation then took place.

"Ah, have you come to apply for a commission in the Irregular Cavalry?"

"No, sir, I am not an officer in the army, but —"

"Oh, then you are a doctor. I will make you a staff surgeon, if you like."

"I am not a doctor, sir, but —"

"Well, what are you, in the name of goodness?"

"I am a tailor, sir, and I beg —"

"Well, well, I dare say you will be of use somehow. I will have you gazetted to-morrow. Give me your name."

"No, sir, I do not want anything at all." And the poor man went away, without having been able to state his business.

All the English officers, of both branches of the Turkish Contingent, were required to learn at least the words of command in Turkish, and several of them learnt considerably more of that language. But this was a serious stumbling-

block to some of them. I once heard on parade a very excellent officer, commanding a brigade, call out in Turkish, with a distinct Irish brogue, "Right wheel! Left wheel!" His brigade stood still of course, under the impossibility of obeying two such contradictory orders. Seeing this, the brigadier shouted in his own pure Irish vernacular, "Holy Moses! Come on anyhow, will you!"

There was a young ex-Life Guardsman in the force, a heavily bearded specimen of an Englishman. He was very wild and very extravagant; living from hand to mouth, and, as Tom Moore said of himself, not always having anything in the former to put into the latter. He came to me one day, with his square face burnt into a preternatural ruddiness, whether by the sun or by brandy is neither here nor there. He asked me to be good-natured enough to lend him a small amount, of which he was in urgent need. Supposing that he required only thirty or forty pounds at most, I consented.

"Oh, thank you very much," he said. "You are always so awfully kind. How much would it be quite convenient for you to let me have? A thou? Two thou?"

I could not help laughing at his coolness, and I told him he had better apply to a richer man, as I had children who, according to the most virtuous of mortals, the Antonines, Socrates, Epictetus, Fénelon, and Wilberforce, should be regarded as hostages given to fortune. The ex-Life Guardsman, without a trace of disappointment in his face, said he was not acquainted with any of those rich fellows I mentioned, and could not apply to them. "But never mind, old fellow," he added, "come and lunch with me to-morrow."

A very efficient officer was a major, who had been gazetted out of a cavalry regiment at the Cape as a deserter. He had applied for two months' leave of absence to go lion-shooting in central Africa. He did not return for seven years. Having a large fortune, he travelled about the world without any definite purpose, and hearing of the demand for officers in the Turkish Contingent, he thought of resuming a military life. He had been a good officer, and his application was granted at once. His strange habit was to carry nothing with him but a comb, a tooth-brush, and a cheque-book. He said that baggage was a bore, and that he could always buy a change of linen. When he first appeared in England, after his adventures in central Africa, he went to see

his mother, a lady of great refinement. On the morning after his arrival, she went to see her dear boy in his bedroom. There was no one there, the bed had not been used, the window was open, and a rope hung from it to the ground. In great alarm, she sent servants in all directions to look for him. He was found asleep under a tree in the garden, which, he said, was more comfortable than a close, stuffy bedroom.

SHUMLA.

AFTER a short interval of absence, during which the Bashi-Bazouks had taken up their winter quarters in the great Balkan fortress of Shumla, I rejoined them at that place. Many officers, previously detached, came to headquarters there. The most distinguished of these was undoubtedly Major Green, now General Sir Henry Green, who was then adjutant-general of the Irregular Cavalry Division. No better selection could have been made for that important post, as he had served in one of the finest irregular cavalry forces in India, the Scinde Horse. One of his characteristics was to have no pity on affectation. If an officer had anything of dandyism about him, it would soon be taken out of him in the adjutant-general's office, where all officers had business to transact.

There was a sergeant of the Life Guards among the non-commissioned officers sent out to the Irregular Cavalry by the War Department. Most of those men were objected to by Major Green as being too careful of their own comforts to be capable of roughing it in such a service. This sergeant went one day to his office, and complained that he had been on guard without a single piece of furniture in the guard-room.

"Malcolm," called Major Green to his brother, Captain, now Colonel Green, who was assistant adjutant-general, "telegraph to Lord Panmure to send out immediately an armchair and a feather-bed for this sergeant. You may go," continued he to the man, "it will be all right next time you are on guard."

In the orderly-room one day General Smith showed me an application from the late Major Walpole, then in command of one of the regiments of Bashi-Bazouks, that a rocket troop, sent out with a brigade of horse artillery by the War Department for service with the Irregular Cavalry Division, should be attached to his corps. This officer had been a lieutenant in the navy, and subsequently a

captain in the militia regiment of his brother Lord Orford's county. He was a very clever man, had travelled much in Turkey, and, above all, he was mainly instrumental in raising the Irregular Cavalry. He consequently took the position in the division of having been one of its organizers. Being accustomed to the management of bodies of men in his varied experience, the regiment under his command was in perfect order; but General Smith, though acknowledging this fact, could not easily overcome his sense of the incongruity of a cavalry regiment being commanded by a naval officer. He turned the application for the rocket troop over and over in his hand, examined the signature, looked at the seal, folded up the letter, opened it again, and threw it down at last with apparent disgust.

"Let him have it," he said. "I am glad he did not apply to have a gunboat attached to his regiment."

When we were on parade one morning, he gazed long and intently at Major Walpole riding in front of his regiment. Then, turning to me, he asked me if I thought Walpole had ever ridden anything but the bowsprit. In the course of the evolutions, it became necessary to order him to form line with his regiment. Hearing the word of command, he called out, "Ay, ay, sir!" as they do in the navy.

"Well done, Paddlebox!" exclaimed General Smith.

But he had a very high opinion of Major Walpole nevertheless. A junior officer once ventured in the general's presence to criticise a movement of his. The general went down his throat, boots and spurs and all.

"Silence, young man!" he exclaimed. "Respect your senior officer, who knows how to command a regiment better than you do, or ever will, I dare say."

That this praise from so able a general officer was deserved by the late Major Walpole, met with confirmation from another eminent judge of military merit. Major Green was sent to inspect Major Walpole's regiment when it was detached from headquarters. His report was entirely favorable, and it showed that, when holding an independent command, no officer could have been more efficient than he was in maintaining perfect discipline, and teaching his men to look up to and have confidence in their English leaders.

There were among the officers some young Guardsmen, who seemed to treat the whole thing as a very good joke.

They were of the innocent lambs, mentioned by poor Whyte Melville in one of his books, frisking in the sun on their way to the shambles before Sebastopol. One of these had been a queen's page, and was conceited accordingly. He made a point of being always late for parade. As he was adjutant of a regiment, this was rather a novel fault to deal with. His commanding officer was a soldier of long experience and great abilities, but he was not blessed with the amiable gift of a good temper. He used to fall into a towering passion at the shortest notice. To be sure, he would fall out of it as promptly. At last he threatened to put the young guardsman under arrest if he should continue to make his appearance so long after the "assembly" had sounded. The adjutant coolly wiped his face with a cambric pocket handkerchief, and said,—

"My dear fellow, you are truly very disgusting to bully one in such hot weather."

It was freezing at the time, and the ground was covered with snow. His colonel lost his temper, of course, and sent him to his quarters under arrest, calling him an infernal scoundrel. The ex-page rightly judged that that this was going rather too far, and he addressed a complaint to the general commanding. We were in the orderly-room when it was handed to him. He read it, and gave it to me to read.

"Your special duty," he said, "is to transact all business we have with Turks. This colonel is a regular Turk. I leave you the case to settle as you think fit."

The fact was that he never liked to be obliged to apply his principles of severity, and I perfectly understood that his wish was to have the matter concluded amicably. The colonel and his adjutant were sent for. I told them that they had both allowed themselves to use unbecoming language as officers, but that their fault might be overlooked if they made proper apologies. I added that repeated lateness for parade was a military offence, which must be treated as such. The Guardsman in most suitable terms begged to be forgiven for his want of respect to his chief. The latter began in the same kind tone, but, perceiving a provoking smile on his adjutant's face, he broke out again, and exclaimed,—

"I am required to apologize—I do apologize. You are not an infernal scoundrel, but, sir, you are an impertinent puppy!"

This was too much for my gravity, and I could not help laughing. The colonel looked at me with astonishment, then laughed. The adjutant laughed too, and we all shook hands. I reported to the general how the affair had terminated. I saw that he was greatly pleased, but he looked even more savage than usual.

"It serves me right," he grumbled, "I was a fool to let so good-natured a fellow as you deal with so serious a case."

Many are the pleasant recollections I have of that winter at Shumla, though upon the whole, what with our unruly men, the bitter cold, and the general discomfort, we had a hard time of it. We made up our minds, however, to emulate Mark Tapley's cheerfulness, and succeeded fairly well. Of course we had the inevitable race meeting, else we should have belied our nationality. The troopers all had their own horses, and were allowed to enter. Off they set, thirty or forty in each race, shouting, spurring, and coming in with their poor beasts at a canter, utterly pumped out. But there was much laughter and good humor, which had the effect of drawing still closer the tie of cordiality existing between officers and men. Nor must I forget to mention the display of millinery in the grand stand which had been put up for the accommodation of those ladies, not a few, who had not shrunk from the dangers, sufferings, and general privations attending their accompanying their husbands to the front. I remember going to call on a young captain of an English regiment of Dragoon Guards, who had brought me a letter of introduction. I found him and his charming wife, who was of a well-known noble family, sitting shivering in a half-roofed hut, built of planks, snow falling from above, and a piercing north wind blowing through every chink. She was trying, with a pair of clumsy Turkish bellows, to keep a small fire burning, on which there was a pot containing their dinner. I could not help expressing regret that they should be so uncomfortable, and inviting them to stay with me till the weather should be finer; but the lady declined, saying that she had expected to find everything "so nice in the luxurious East," but that she had come campaigning, and must put up with it all.

Soon after the races one of the regiments was detached to Rasgrad, about forty miles north of Shumla. I was ordered there afterwards to make some necessary arrangements, the paymaster taking advantage of the opportunity to

send a large sum of money with me for the payment of the contractors and troopers.

"You make me responsible for this enormous sum of money! Well, I hope you will at least come and see me in the Queen's Bench when the war is over," said General Smith, with his pathetic face and mournful voice, when I took him the warrant to countersign.

A ponderous Hungarian surgeon also had to join the regiment at Rasgrad. He applied to Major Green for an escort.

"Malcolm," said the adjutant-general to his brother, "put it in orders that the surgeon is placed under the charge of Mrs. Tomkins on his march."

Mrs. Tomkins was a worthy lady's-maid in attendance on my wife, who was to accompany me to Rasgrad, where I should have to remain some time. During a long life this respectable old maid, who had only brevet rank as Mrs., had never been out of England, and she had some difficulty in reconciling herself to the hardships she had now to undergo. Once, while sitting with her mistress on the top of the baggage, jolted along in a springless Bulgarian wagon on the line of march, with the snow falling thick around her, she gave vent to her feelings, whimpering grievously.

"This may be all very well for you, ma'am," she sobbed, "who are following your husband to take care of him when he is wounded — but for a domestic servant —"

A flood of tears alone was able adequately to express her sense of the painful falseness of her position. Poor old Mrs. Tomkins was indeed to be pitied; but she was nevertheless of great use to the young officers, making gruel for them when they caught cold, sewing buttons on their shirts, and caring for them in every sort of motherly way. Now she had to look after the Magyar surgeon, who took Major Green's joke *au pied de la lettre*, and kept himself tied to her apron string. But just when he should most have done so, he pushed on to reach Rasgrad before it should be quite dark. We soon afterwards met a stout old Turk on an ambling pony. He seemed to be a grizzled, hard-faced man, the lines of whose underlying cunning were laid bare by age; and yet he proved "as mild a mannered man as ever cut a throat." I accosted him with the usual Turkish traveller's salutation, — "*Oghurlar ola!*" ("May you have a prosperous journey.")

The man pulled up, and said, —

"Your politeness makes me stop. The last English officer I met half an hour ago was not so well-bred. I let him go on. I will acknowledge your civility by doing you a kindness. Follow my advice. Pass the night at that village. Farewell."

There was a lady, there was a large amount of government gold, and there was Mrs. Tomkins to take care of. The old Turk's advice must have a motive, and there could be no doubt, in any case, that the village was better than a benighted road under the circumstances. The night was at hand. It was too late to warn the surgeon, and there was no one I could send to his assistance. Turning to the left, we soon came to the village and remained there. Next morning we heard that the surgeon had been waylaid by Bulgarian brigands, and robbed of everything he had with him; while his unfortunate German apothecary, who was with him and had attempted to resist, had been stabbed to death. The surgeon complained so bitterly of the loss he had sustained through the villany of the Turks whom he had come to assist in their war with Russia, that Lord Stratford took pity on him, and obtained for him from the Porte a compensation probably exceeding the value of what he had been robbed of, which he stated without the possibility of any verification.

After my return from Rasgrad, I had a dinner party to do honor to General Shirley, who had been sent to inspect the Irregular Cavalry Division. Among the guests was the lion-hunting major already mentioned. It was remarked that he came with an unusually smart uniform on. Before the dinner was half over, a note was put into his hand, on perusal of which he seemed much confused and embarrassed. He asked permission to withdraw, as his presence was absolutely necessary at his quarters. On leaving the dining-room he was hailed by shouts of laughter. After a long parley outside, he returned, and resumed his seat at table. Being pressed to explain the mirth of those whom he had seen at the door, he told his story with some little shamefacedness. He said that on receiving his invitation to this dinner party, he felt that his uniform was quite unfit to be worn. Fortunately, he met an officer of his own figure, wearing a new outfit just received from London. He proposed to him to undress on the spot and exchange uniforms. The idea was scouted at first; but so persuasive and urgent was the gallant major, that at length he gained his

point on giving his solemn word of honor that he would return the uniform without a moment's delay when it was asked for. The note he had received was from this officer, who stated that he had been sent for by the commanding officer of his regiment to appear before him immediately, and that he could not go in such a shabby suit as the major's. He therefore demanded that his own should instantly be restored to him; and he had brought several of his friends to enjoy the joke. Having forced the major to leave the dinner-table, they were satisfied, and told him that the note had been concocted merely for revenge. General Shirley's aide-de-camp remarked that Lord Bacon called revenge only a sort of wild justice. That aide-de-camp was the much-lamented Whyte Melville, who was deservedly one of the most popular officers of the Turkish Contingent.

From Blackwood's Magazine.
DENIS.

CHAPTER I.

"I have lost, — oh! many a pleasure,
Many a hope, and many a power."

THE night is dark, with but few stars shining at wide intervals in a blue-black, cloudless sky; and they but dimly serve to define the varieties of shadows cast by the great cedar on the lawn, the stiff, motionless yew-trees rising at regular intervals from a prim-clipped hedge, and the bare stone house, known as Hawkesley Hall, about which they stand sentinel-wise. Of a sudden a window on the ground-floor is pushed up, and a little stream of light is thrown forth, cutting in two parts the surrounding blackness; and after a moment's hesitation a woman's figure steps forth, and passing beyond the stream of light which illumines the hedge of yew, proceeds to pace back and forth — a restless shadow amongst all these quiet ones. The starlight now and then, as she passes from the darkness of the cedar-tree to the fainter shadows that lie beyond it, gives a glimpse of a pair of white arms and a white throat which gleam through the thin black of her gown. It is so still, that the sweep of the long train over the soft turf is magnified into a decided sound in the quiet of the night.

At length, under the cedar, there is a pause; the two arms are crossed on a low bough, and a white face — very white in

this faint starlight — is lifted to the skies.

"Yes, I am determined: my mind is quite made up. I will tell him everything to-night. I have been a coward so far, but I will be one no longer."

The voice that broke the stillness was not a girl's voice: one instinctively felt that, notwithstanding the evidence of the slender shape dimly outlined against the darkness. It was a woman's voice, pure and sweet, but with the richer tones that only life with its fuller knowledge can give. It was the voice of one who had done more than catch sweet distant visions, or dream tender dreams, of the "promised land." More akin was it to that of one who had counted the cost of the journey thither.

But then grief, instead of happiness, sometimes turns the key of life; and from either guide we learn so much, that it is often difficult to judge from a face or a voice which has been the teacher.

"I wish he would come," the voice sighed, a minute later. "My courage is growing fainter as I wait."

Even as she spoke another shadow for a second eclipsed the stream of light from the open window, and a man with hasty feet approached her side.

"I was told by Benson that I should find Mrs. Jardyne in the garden. But is it wise, darling, to be here in the night air with no shawl, and in this thin gown?" laying a caressing hand upon her arm.

A very different voice this — young and eager, full of hope and life. Even in the darkness, had it fallen upon your ear, you would have placed its owner in a happy category, and sworn that he was standing on the verge of life, looking forth over wide vistas lit by the light of love and hope.

"Vin," the woman said, taking no heed of his words, "I am so glad you have come. I want to tell you something."

"Something very serious it must be. What a grave voice!" taking her hands in his and leaning towards her, the while essaying through the darkness to read the lines of the face before him. And then, more lightly: "Let us hope the words are not worthy of the tones in which they are spoken."

"I wish," she went on, for a moment pressing the hands that held hers, "to speak to you about Mr. Jardyne."

"Not to-night," he interrupted. "Let us be happy to-night, and forget him. Do not think of *him*," he pleaded gently. "He has been dead, — how many years is

it? I hate" — with sudden momentary passion — "to remember that you have had a past in which I have no part or lot. But," his voice falling, and drawing her nearer to him — the kindly darkness hiding the pain in his eyes — "you did not love him. You kept that good gift for me?"

"No, Vin, I did not love him," rousing herself, and her soft voice hardening; "and I am sorry to speak of a time or a man whose memory I wish, oh, I wish, I could blot out of my life. But I must tell you something, and after to-morrow —"

"After to-morrow you will no longer be his widow; you will be *my* wife."

There was a ring of proud exultation in the glad voice, which seemed blown away by the soft low sigh that came after it — a sigh that was almost immediately followed by the words that broke abruptly in upon it. "I did not lose him first by death —"

A pause, a quick, painful breath that told of reddening cheeks — and the stillness round seemed all hushed, like the young man's quiet, dark figure, to listen to the swift words.

"No: three months after I was married, I woke to find that it was not love that had prompted him to marry the heiress of Hawkesley; and sixteen weeks later he preferred a life of poverty with the woman he *did* love."

Silence, till the last word had died away; and then a rustle in the tall boughs overhead, as if they had paused to hear the secret, and were now whispering it abroad; then a quick movement of the man's silent figure, and his arms were tight clasped about the tall black shadow.

"My poor darling!" he whispered tenderly, drawing her towards him, till her face was hidden against his fast-beating heart. "What grief! what pain! But it is all over now. From to-day you have to forget it all, — it is a dream of long ago. With the name, the remembrance will be banished. You give me all your love, do you not?"

"Yes, Vin," in a low voice, "it is all yours. I am keeping nothing back. Ah," drawing herself out of his encircling arms, and standing very upright, "there is no one in all the wide world for me to keep any back for! Father, mother — both dead. A betrayed wife, and now a widow, who is there for me to care for, saving you?"

"That is the past," he urged, pleadingly. "The future is what you must

consider. And did ever any one know a fairer prospect? Young and beautiful, rich," stretching his arms comprehensively forth, "and to be married to-morrow to one whom you love, and who loves you more than any one in the wide, wide world."

"And the other side of the picture?"

"There is no other side."

"Ah, Vin, but I cannot help seeing it. You, so young and eager, with all the world before you, and I with my sad past, my wifehood, my ten years of widowhood. It seems cruel to weight your future with my past. I should be happier even if I were younger than you in years, if not in experience; but I am not. How much older am I?"

"I was twenty-one last May."

"And I am twenty-eight. Seven years between us, and on the wrong side. Oh, Vin, I am frightened! The risk is too great," in trembling tones. "I have seen so much grief; let me pass you by, and not throw the shadow of my anxious life across yours."

"I will risk it," he said quietly. "My life shall now stand between you and your past, so fear nothing. Come," placing a tender, protecting arm about her waist, "let us go in out of this ghostly darkness, and you will be braver, and I shall see the sweet eyes that I love so well."

He drew her gently towards the open window as he spoke, and through the bar of light they passed into the house together, from the encircling darkness that lay without.

CHAPTER II.

"How soon our bliss is marred!"

A CLOUDLESS sky overhead, a brilliant morning sun lighting up a sleepy world, its searching rays even lessening the gloom of the cedar, and of the sombre, shadowy yews, and bathing in golden light the tall figure of Denis Jardyne, as in a soft, white morning gown she sits at a table covered with the wealth of a summer garden, arranging, with deft fingers, bowls of many-colored roses.

In the strong morning light we can see her with whose shadow we made acquaintance last night. The voice spoke truly; the shadow of life has swept first youth out of the sweet face. But something better than mere beauty or mere youth lies in the soft, brown eyes, is hid away in the gentle, grave mouth.

The face is too thin for beauty, the figure too thin also; perhaps if we were to

make an inventory of her charms, thousands of other faults would become patent; but by those who knew her—who knew the tender sympathy of the brown eyes, the unvarying charm of the sweet voice—Denis Jardyne was always considered beautiful.

The sun came pouring into the little sitting-room, and enriched the glowing colors of the red roses, and seemed to bring a faint blush to the delicate beauty of the white ones; and Mrs. Jardyne, lifting her head with a little joyful smile, her hands full of flowers, murmured as she placed them in a great blue bowl, "Happy is the bride that the sun shines on."

The opening of the door disturbed her thoughts, and she turned her head on seeing old Benson standing in the doorway.

"What is it?" she questioned.

"There is some one asking to see you, ma'am. I have told him as it is most inconvenient; but he says he will not detain you many moments, and that he particularly wishes to see you."

"What is his name?"

"He didn't give it—only said as his business is most important, and that he cannot leave a message."

"Well, ask him to come in here," Mrs. Jardyne replied, turning back to her roses.

A minute later the door was re-opened, and a tall, middle-aged man entered the room. In a very leisurely manner Mrs. Jardyne turned round at the sound of the closing door,—that happy smile still upon her face, like a reflection of the brilliant sunlight that illuminated the room,—her slender hands full of flowers, to learn what was the stranger's message.

But as her gaze fell on the tall figure standing so motionless, the sombre eyes fixed on hers, of a sudden the color fled from cheeks and lips, the smile vanished, leaving the face drawn and agonized; the flowers fell unnoticed to her feet, whilst a low, sharp cry escaped her—"Robert!"

Ah! it required not his voice to tell her, as she looked at the haggard face and miserable eyes, that they were those that had looked away her heart when she was only seventeen years old.

She did not speak again, did not utter another cry. Her very brain and heart seemed turning into stone, as she stood gazing at this ghost of the past, that had risen up to kill with its cold finger all her beautiful present.

There she remained, white and petri-

fied, all her terrified soul gazing out of her eyes — eyes which he who stood facing her found it hard to meet.

It was he, the man, who at length broke the horrible silence, taking a few steps nearer to her as he spoke.

"I have come," he said, "only because it was told me that a false report had reached you that I was dead. I only learnt," flushing uneasily, "about you a few days ago, and I have travelled night and day since, to let you know the facts of the case."

He was standing close beside her now. Apparently his proximity brought back the life to her frozen limbs.

With a shudder, she took a hasty step away from him, stretching out her hands as she did so. "Don't come near me," she panted. "I cannot breathe when you are near me!"

He took a step away from her, but he answered nothing, and his eyes fell before hers.

"Do not fear," then he said bitterly. "Do you think that it is any pleasure to me to come and tell you this? Why, I would ten thousand times rather you had been happy in your own way; but something — conscience perhaps — urged me to undeceive you, so here I am. Now that I have told you, there is nothing else to be said by either of us, so I am going. I meant only to spare you future misery, for you would surely have discovered the truth some day; but" — waveringly, then turned away a gaunt, shabby, stooping figure, towards the door.

"Robert," she called, "forgive me. You did not mean to be cruel, I know. But listen," her voice rising passionately. "Ten years ago you destroyed my youth, burying it forever in a dishonored grave. You killed my happiness, my faith, my love — everything I had of value; and now that after all these years I have acquired a fresh store to serve me for the coming time, you take that away also. Past and future, you have robbed me of everything!"

Mr. Jardyne paused when his wife's voice broke the stillness, but he did not turn his head, perhaps had not courage sufficient to look at her standing amidst her flowers in the brilliant sunshine, with all its reflection faded off her face. Perhaps he remembered the expression of the sorrowful brown eyes, and feared to meet them.

But after that moment of irresolution he turned back, and without looking at her, "Denis," he said, "it is folly to talk of

grief for such wrongs as yours. This world may never see them righted, and they all lie at my door. But you must always remember the law is on your side. It lies with yourself alone whether you will appeal to it."

"But you know," she interrupted, "that I never would. Years ago I decided that such sorrow as mine could not be righted in such fashion. And I do not waver now."

He did not answer her words, but after a moment, "Denis," he went on, "you need not despair. You are yet young. Life has gone very hard with me," a painful red dyeing his cheeks. "I do not look like one who will live forever."

"Ah, Robert," she cried, her voice breaking, "I am not hard enough, or cruel enough, to care for happiness won in such a fashion! What have I said," her voice softening, "that could make you think so?" And as she took in the shabbiness of his attire, the thin hollows in his cheeks, and the dark circles round his eyes, "Surely the past has *some* hold on you, or you would not have come here to-day; for I know, Robert — I know you only meant kindly towards me, though you have broken my heart. And surely, also, it has some hold on me, for it pains me to see you looking thus miserable."

He did not answer her, but took a few steps towards the door, and there once more paused.

"It is cowardly, I suppose," then he said abruptly, "to wish one's self dead, but that is what I wish to-day. Life clings so persistently to those to whom it is worthless."

Another moment's silence, then a faint flush dyeing her white cheeks.

"Where is *she*?" Denis asked quickly.

"Ah, dead!" he cried, a ring of anguish in his voice.

The softness fled away from the brown eyes, the voice grew hard and cold. "You took your choice," she said. "You took your happiness at the expense of mine; and now, now when after long years of misery I have love offered me once more, it is to you again I owe its loss. Oh," with sudden vehemence, clasping her hands together, "go, I pray of you! It is all I ask of you, all you can do for me — never to let me see your face again!"

With the last word she sank down on the chair, burying her face in her arms, thrown despairingly amongst the crushed roses, and Robert Jardyne paused one moment on the threshold to look at her.

He noticed the prone head, the summer sunbeams turning to gold the brown soft hair; the despairing figure of the woman in the white gown, with the red and yellow roses at her feet, where they had dropped from her careless hands; the profusion of blossoms all about her, the blue bowls, the summer sunlight flooding the whole room with its clear gold; and beyond, the dark green of the yews, standing stiff and solemn.

It was a picture imprinted on his brain to haunt him to the last hour of his life.

With his hand on the lock he half turned towards her. "You shall learn," he said slowly, "the first moment that you are free. Good-bye."

There was no answering word — no sign even she had heard — and, without another syllable, he turned the handle, and she was left alone.

Outside, in the fresh morning air, Vincent Halliwell was making his way as swiftly as young happy feet would carry him, whistling snatches of songs as he walked.

Strong and agile, every movement full of life and hope, without a line on the open brow to tell of the twenty-one years that had passed over the fair young head, he found himself at the entrance to Hawkesley, standing face to face with a tall, stooping stranger, who was issuing forth — a shabby, dark figure — into the brilliant sunlight.

There was a moment's almost involuntary pause, and then, not meeting the glad young eyes turned on his, "Mr. Halliwell?" said the stranger, interrogatively.

"You wish to see me?" the quick, boyish tones questioned.

And on receiving a reply in the affirmative, the two turned away together in the direction of the lawn and its overshadowing cedar, the impatient, eager steps of Vincent Halliwell striving to keep pace with the slow feet of his companion.

Fully two hours later the door of the sitting-room was slowly opened, and Vincent Halliwell, standing on the threshold, saw, as Robert Jardyne had done, the white figure in the flame of sunlight.

But the brilliancy all around seemed to mock at the despairing, drooped head, at the fading roses; and noting all this, it was with a cry of pain that he flung himself on his knees beside her, kissing the white gown and slender hands.

"Ah, my darling, do not despair! Lift your head and speak to me."

And as she did not move, "Look at

me!" he cried vehemently. "Do you think that I am going to give you up? Why, if every obstacle earth contains lay between us, my love would eventually conquer, and I should win you."

She raised her head then, but it was only to say, unheeding of his tender, eager words, "Why have you come? Oh," clasping her hands, "I cannot bear it! I cannot. Life is too hard — always has been too hard — for me. But," her voice sinking, "I am conquered now. I have no courage left."

"No, no, Denis, you are too brave a woman for that," rising and pacing the room. "It is but a little more you will have to bear, and then you will be mine to protect. For you love me," pausing, and placing two strong hands on her shoulders. "Yes," looking into the miserable, upraised eyes, "true as truth. Whatever else may change, your love never will. It is mine forever."

"Forever, Vin, forever," passionately, lifting her hands imploringly, and then a faint color burning into her cheeks. "But love will not set things straight; love will not help us to say good-bye. The courage I have been gathering so hardly these last two hours is all departing. Do not try it too far. For old times' sake," taking his hand in her two slender, burning ones, — "for old times' sake, kiss me once, and wish me well; and then go — pass out of my life forever."

"Denis!" he cried hoarsely, of a sudden seeming to grasp the meaning of her words, to note the anguish of her eyes, — "you do not know what you are saying. Leave you? Bid you farewell forever? It is impossible. No; hear me — you *shall* hear me," as she would have stayed his words, obliging her as he spoke to sit down, and flinging himself on his knees by her side, whence he could look up into the shadowy brown eyes. "You are a woman — a tender, loving woman — but that is all. You cannot judge for me. I am a man. No," tightening his hold on the hand he held, "there is no use saying you are older than I. Yesterday, perhaps, I was a boy, and you a woman; but to-day I am ten years older!"

"Ah, poor Vin!" she said quickly, for a moment laying her slight hand on the fair head.

But she added nothing further, did not strive to check him, as his cheeks flushing, his words coming faster in his excitement, he told her that the law was her only remedy. That the bar of the law once placed between her and the man

who had ruined her happiness, her life would be her own, to do what she would with.

"In the mean time," he went on, "I will wait. I will go abroad, never see you — it will only be for a year — it is not so very long, for we can trust each other; and oh, my love," his voice failing him, "you are well worth waiting for!"

She heard him in perfect silence — not one interruption did she offer; but there was something more chilling, more hopeless, in the stillness and gravity, than there would have been in the most outspoken condemnation.

And so Vincent Halliwell felt, though even to himself he would not acknowledge it.

He knew what the quiet voice was going to say, even before the low tones fell on his ear.

"No, Vin, I could not. You know it, even whilst you are saying it. Do you not?" tenderly, as he made no reply. "No law can *undo* the past. It can give me freedom," as he would have interrupted, "but that I have. He has promised never to return. And if he keeps his word, I ask nothing more from life. So much hold my past has upon me, that I could not bear to have his name — *my* name," a little bitterly — "dragged through the mire. And as for the rest, well, I must let it go."

"But you shall not," he cried impetuously. "If you have no thought for yourself, — if," passionately, "you do not care for yourself, all the same you must think of me. I," his voice faltering, "cannot let it go."

"And do you think it costs me nothing to say so? I speak calmly, because when two hours ago that door opened, and I saw *him* standing on the threshold, then I died. Then all happy things were in a second of time swept out of my life, and I suffered all I could suffer. Ah, poor Vin, poor Vin!" her calmness of a sudden leaving her, and the tears filling her eyes, "how can I bear it! Something always told me I was not fated to enjoy such happiness."

But even yet Vincent Halliwell could not believe her, could not comprehend that his will would not eventually conquer hers, more especially as her love was fighting on his side; but his passion and eloquence were alike unavailing; she could only implore of him to leave her, to shorten these bitter moments, leaving her forever the memory of his love, on which her heart would live.

"If," her voice faltering, "they should never meet again."

The agony of her voice and eyes touched him, and he stood silent before her, noting as in a dream the soft brown of the hair, the sweet, tearful eyes — which strove not to meet his — and the other beauties of the slender white-robed figure, which only that morning he had thought would so soon pass into his keeping forever.

And with that thought, with the remembrance that he was giving it all up, — or rather that it had of a sudden passed beyond his grasp — he flung himself on his knees, and with his face hidden in the slender hands on her lap, he burst into tears. She felt those burning tears, with what a pang, who can say? but no word escaped her; though presently, as he did not move, she with her left hand, on which an opal ring — his ring — shimmered, gently smoothed his ruffled fair curls with a tender and caressing movement.

At length, — "You have conquered," he said, not looking up. "When you speak to me, and pray of me to go, I can do nothing but obey you, though it is to my own misery, — and I believe to yours. But," raising his head, "should you ever repent, you swear you will let me know? Denis," passionately, taking her hand in his, "swear to me that the very moment you learn you are free, you will send for me. Be it to-morrow, or twenty years hence — let me be in England, or hundreds of miles away — write but the one word 'Come,' and as swiftly as I can be by your side, so swiftly may you count upon me."

"I swear it, Vin," she answered low, her hand in his. "And if you do not come, I will forgive you; and if you do — ah!" breaking off: "say good bye, I cannot bear it!"

"It is only at your bidding that I say it at all," he cried. "Unsay your words even now. Consider, for my sake, for your own sake —"

But she only shook her head impatiently, her lips growing white the while. And his young eagerness seemed destroyed by the chilling hopelessness of her looks. He said nothing, but with a sudden movement he took her in his arms and kissed the white lips and cheeks with such passion, that she shrank away terrified.

"That is my good-bye," he said hoarsely. "Good-bye, my love, my promised wife; we are young, we can afford to wait. I will live on the thought of that."

At the door he paused irresolutely, then returned once more to her side.

"Say something to me," he said, "something to comfort me."

She half stretched out her hands as the miserable words fell on her ear, but then, as if remembering all that lay between them, clasped them tightly together.

"What can I say, Vin?" she began. "It seems to me I have spoilt your life for you. What can I pray for you? I think, dear, the kindest prayer I can pray is, that God will be very good to you, and teach you to forget." And as he would have interrupted: "No, Vin, I do not mean anything unkind, though just now, perhaps, it may sound so; but life is not given us just to lament in. And you are so young and strong, and have so much to do with your life, that you will be brave, will you not?"

"Thank you, Denis," lifting her hand to his lips. "For your sake I *will* be brave, and — I will wait:" and so turned away through the rays of sunlight into the cold world, which for him lay beyond the reach of Denis Jardyne's smiles.

CHAPTER III.

"And most forget."

IN the brightest, happiest life, ten years make many changes: the point of view is altered, the line of hopes and fears gets shifted.

To whom is it given to look back ten years, and say, "Those whom I loved then, to them do my thoughts turn to-day: as they were first then, so are they first to-day?"

But to Denis Jardyne, as she paced up and down a pretty London drawing-room, no such thoughts came, no such comparisons of to-day and yesterday. For was not this the tenth anniversary of that wedding-day that had risen fair and cloudless as to-day had done; and had she not now in her possession a small note, which told her how a troubled heart had wrought out its ordained task, and at length slept calmly — forgotten alike its sin and sorrow — by the blue Mediterranean waves?

"So that now," lifting tender dark eyes and smiling softly, in such a fashion as to make one forget she was no longer young and girlish — "now he may come back. Even," with a sad little smile, "if he no longer wishes anything else, at least I may see him. Ah, Vin," clasping her hands together, "just to hear your voice once more!"

It was a perfect summer day, a day best

enjoyed in thorough idleness — and in such fashion Denis Jardyne toyed with each summer hour.

The little note hidden away on her heart, seemed to carry soothing in its touch, and through the morning hours she strove, though ineffectually, to take up one employment after another. And at last, owning herself beaten, she gave orders that no one should be admitted; and settling herself comfortably in an easy-chair in the pretty little boudoir, from which every ray of sunlight had been carefully excluded, she gave herself up to idle thought.

"Four o'clock," glancing towards the mantel-shelf. "I have two hours to think in, and in which to write my letter," a little flush of red stealing into her cheeks.

"What shall I say?"

"Five o'clock!" as the silvery chime broke the silence again. "What a short hour it has been! Now," rising to her feet, "I *must* write."

She moved slowly to the table, and drew pen and paper towards her. But even with the pen in her hand and the paper before her, it was a long, long time before the letter was written, though the words were few that it contained.

"Come, dear Vin, wherever you may be, and let me see you once more. If you are happy, still let me see you, and know it, and rejoice to know it. If you are unhappy, come and let me comfort you, if I still have the power." Then the signature, "Denis Jardyne," and the date, ten years since she first thought of writing this letter, and the thought sent a momentary chill to her heart. But she folded it up and sealed the envelope, addressed to the care of his lawyer, — the only address he had left when he bid her farewell so long ago, — for the first time making use of it, since that morning of her first despair. Then as she sat watching it, and in fancy following it on the journey: how far would it have to go ere finding him? how long would it be ere she held his answer in her hand? — there came a knock at the door, and the warning voice of her maid, bidding her remember she was dining out, and that it was growing late. With the letter still in her hand she went up-stairs.

"I will post it to-night," she thought, laying it on the table. "But no," a sudden idea striking her, "I will go to the lawyer myself with it to-morrow, and learn where he is, and how long it will be before I can hear from him." And the thought sent a flame of color into her

cheeks, that for a moment seemed to restore to her her lost youth.

When she was ready she dismissed her maid, and cautiously locking the door, crept candle in hand to a large mirror, and looked long and earnestly at herself, blushing the while at the unaccustomed vanity of her action.

She leant so close to the glass, that every line under the dark eyes and about the sweet mouth, every gray thread in the brown hair, were distinctly visible. And after a moment, "Ah!" she exclaimed impatiently, turning away, "why do I look? Do I not know that I have grown old? that all the beauty I once had, has vanished away? Why do I remind myself of it? Why does my heart keep young? It is out of keeping with myself!"

She unlocked the door, and went downstairs calm and grave, the shadowy smile that had haunted her all day quite swept away.

Later on that same evening in Lady Andrewes's rooms in Berkeley Street, a pleasant party was assembled; but that was scarcely strange, for Lady Andrewes had a happy knack of getting the right people together; and on this hot July evening they seemed to enjoy themselves in all varieties of fashion, from the charmed audience gathered round the piano in one room, to those listening to the lightest gossip of the hour, and its attendant flirtation, about the wide-open windows that looked into the silent night.

"How beautifully Mrs. Jardyne plays!" some one remarked; and there was a pause in the low hum of conversation, to listen to one of Mendelssohn's tender, wordless songs: music that seemed to come from Denis's heart, and that, as she played, seemed to herself and others stamped with her own sad individuality.

"Who did you say was playing?" a quick voice asked, — the voice of a man who had been standing for a few minutes behind the player; and as he put his question, he leaned forward to try and gain a glimpse of the musician's face.

Before the question received an answer there was a jarring discord that killed the sweet sounds, and Mrs. Jardyne rose to her feet, with a gasp as if for breath.

But in a moment, with a word of apology for the mistake she had made, she was quiet and grave as ever, and she walked the whole length of the room on the arm of the man who had been standing by her side, ere she paused, and turned her eyes back in the direction whence she had come.

What she saw, when she did so, was a bearded, bronzed man, with the eager blue eyes she had thought of so often, and seen in so many a weary vigil; eyes that had matched so well the young, confident voice.

And by his side stood a slender, brown-eyed girl, in sheeny white satin; strings of pearls in the soft brown hair, and on the round arms, and about the fair throat: a picture, indeed, of all that was most gentle and lovable in womankind; a picture, that in some faint, intangible fashion, brought back to Denis Jardyne her own girlhood, and what she herself had been before life had dealt so roughly with her.

"Who," — was it her own voice she heard, that sounded so misty and far off? "who is that girl by the piano, Mr. Lewis, do you know?"

"That is Mrs. Halliwell, — Vin Halliwell's wife, you know. He is just home from India, or some far-off spot, where he has been wandering for years and years. But his wandering has stood him in good stead. She is lovely, is she not?"

"Lovely," the far-off voice whispered. "I used to know him — I should like to speak to him, I think."

So, leaning on Mr. Lewis's arm, she made her way towards the far end of the room.

"Halliwell," — Mr. Lewis touched his arm, and then Denis's voice interposed: "I am Mrs. Jardyne. I saw you here, and am come to ask you to introduce me to your wife."

At her voice a shadow of pain crept into the frank, blue eyes. Not pain itself, but the faintest, far-off shadow of it, as on a happy, sunny day, some casual occurrence may bring to our mind some poignant sorrow once experienced, over which the waves of time have washed since, till the very memory of it is dulled: and then, "Denis!" he exclaimed, and for a moment looked at her, as if striving to see a vanished dream in the tall, black-robed figure before him, in the still, grave face, — there was no shadowy smile about the mouth now, — in the careworn eyes, in the many grey hairs time had sown in the smooth, brown locks.

He added nothing to his exclamation, but introduced his sweet, shy wife, and watched with all a lover's pride the glance of admiration Denis gave towards the girlish face; and when Mrs. Halliwell turned away, he followed her graceful figure with his eyes for half a moment, before he turned back to his companion.

"She is lovely," Denis said softly.

"I am so glad you think so."

The quick, boyish voice, scarcely aged at all, just as she had remembered it all these years.

And then more slowly, after a pause: "When first I saw her she reminded me of you. I think that was what first drew me towards her."

That was all. The past, except for a certain intangible halo, was cut away from behind him. He was not careless, he had scarcely indeed forgotten, but it was *past*.

He had loved this woman once, — this woman, on whom every hour of these ten years had set their distinctive mark. A great tragedy had divided their lives; they had gone their several ways, and after sore trouble and heartbreak, he had lived it down.

Her own wish had been granted. "God had been good to him; he had forgotten."

Forgotten so completely, that he never even observed that on the slim, ungloved hand that hung by her side, still shimmered his opal ring. That night, with slow, weary steps, Denis Jardyne mounted the stairs to her own room.

She sent away her maid: "She would rather be alone," she said; and then she walked over to the table, and took up the letter that had cost her so much trouble to write.

She did not open it, — she read the address once over, and then she held it in the flame of the candle till a small brown heap of ashes was all that remained of it; and so, in the darkness and solitude of the night, bade farewell to the one romance of her life.

From The Cornhill Magazine.

MAY IN UMBRIA.

FROM ROME TO TERNI.

WE left Rome in clear sunset light. The Alban Hills defined themselves like a cameo of amethyst upon a pale blue distance; and over the Sabine Mountains soared immeasurable moulded domes of alabaster thunderclouds, casting deep shadows, purple and violet, across the slopes of Tivoli. To westward the whole sky was lucid, like some half-transparent topaz, flooded with slowly yellowing sunbeams. The Campagna has often been called a garden of wild-flowers. Just now poppy and aster, gladiolus and thistle, embroider it with patterns infinite and intricate beyond the power of art. They

have already mown the hay in part; and the billowy tracts of greyish green, where no flowers are now in bloom, supply a restful groundwork to those brilliant patches of diapered *floriture*. These are like praying-carpets spread for devotees upon the pavement of a mosque whose roof is heaven. In the level light the scythes of the mowers flash as we move past. From their bronzed foreheads the men toss masses of storm-black curls. Their mighty flanks and shoulders sway sideways from their firm yet pliant reins. On one hill, fronting the sunset, there stands a herd of some thirty huge grey oxen, feeding and raising their heads to look at us, with just a flush of crimson on their horns and dewlaps. This is the scale of Mason's and of Costa's coloring. This is the breadth and magnitude of Rome.

Thus, through dells of ilex and oak, yielding now a glimpse of Tiber and St. Peter's, now opening on a purple section of the distant Sabine Hills, we came to Monte Rotondo. The sun sank; and from the flames where he had perished, Hesper and the thin moon, very white and keen, grew slowly into sight. Now we follow the Tiber, a swollen, hurrying, turbid river, in which the mellowing western sky reflects itself. This changeful mirror of swift waters spreads a dazzling foreground to reaches of valley, hill, and lustrous heaven. There is orange on the far horizon, and a green ocean above, in which sea-monsters fashioned from the clouds are floating. Yonder swims an elf with luminous hair astride upon a sea-horse, and followed by a dolphin plunging through the fiery waves. The orange deepens into dying red. The green divides into daffodil and beryl. The blue above grows fainter, and the moon and stars shine stronger.

Through these celestial changes we glide into a landscape fit for Francia and the early Umbrian painters. Low hills to right and left; suavely modelled heights in the far distance; a very quiet width of plain, with slender trees ascending into the pellucid air; and down in the mystery of the middle distance a glimpse of heaven-reflecting water. The magic of the moon and stars lends enchantment to this scene. No painting could convey their influences. Sometimes both luminaries tremble, all dispersed and broken, on the swirling river. Sometimes they sleep above the calm, cool reaches of a rush-grown mere. And here and there a ruined turret, with a broken window and a tuft

of shrubs upon the rifted battlement, gives value to the fading pallor of the west. The last phase in the sunset is a change to blue-grey monochrome, faintly silvered with starlight; hills, Tiber, fields and woods all floating in aerial twilight. There is no definition of outline now. The daffodil of the horizon has exchanged the tint of the corolla for that paler greenish yellow of the calyx.

We have passed Stimigliano. Through the mystery of darkness we hurry past the bridges of Augustus and the lights of Narni.

THE CASCADES OF TERNI.

THE Velino is a river of considerable volume which rises in the highest region of the Abruzzi, threads the upland valley of Rieti, and precipitates itself by an artificial channel over cliffs about seven hundred feet in height into the Nera. The water is densely charged with particles of lime. This calcareous matter not only tends continually to choke its bed, but clothes the precipices over which the torrent thunders with fantastic drapery of stalactite; and, carried on the wind in foam, incrusts the forests that surround the falls with fine, white dust. These famous cascades are undoubtedly the most sublime and beautiful which Europe boasts; and their situation is worthy of so great a natural wonder. We reach them through a noble mid-Italian landscape, where the mountain forms are austere and boldly modelled, but the vegetation, both wild and cultivated, has something of the south-Italian richness. The hillsides are a labyrinth of box and arbutus, with coronilla in golden bloom. The turf is starred with cyclamens and orchises. Climbing the staircase paths beside the falls in morning sunlight, or stationed on the points of vantage that command their successive cataracts, we enjoyed a spectacle which might be compared in its effect upon the mind to the impression left by a symphony or a tumultuous lyric. The turbulence and splendor, the swiftness and resonance, the veiling of the scene in smoke of shattered water-masses, the withdrawal of these veils according as the volume of the river slightly shifted in its fall, the rainbows shimmering on the silver spray, the shivering of poplars hung above independent precipices, the stationary grandeur of the mountains keeping watch around, the hurry and the incoherence of the cataracts, the immobility of force and changeless changelessness in nature, were all for me the elements of

one stupendous poem. It was like an ode of Shelley translated into language, more vivid through inarticulate appeal to primitive emotion than any words could be.

MONTEFALCO.

THE rich land of the Clitumnus is divided into meadows by transparent water-courses, gliding with a glassy current over swaying reeds. Through this we pass, and leave Bevagna to the right, and ascend one of those long, gradual roads which climb the hills where all the cities of the Umbrians perch. The view expands, revealing Spello, Assisi, Perugia on its mountain buttress, and the far reaches northward of the Tiber valley. Then Trevi and Spoleto came into sight, and the severe hill country above Gubbio in part disclosed itself. Over Spoleto the fierce, witch-haunted heights of Norcia rose forbidding. This is the kind of panorama that dilates the soul. It is so large, so dignified, so beautiful in tranquil form. The opulent abundance of the plain contrasts with the severity of mountain ranges desolately grand; and the name of each of all those cities thrills the heart with memories.

The main object of a visit to Montefalco is to inspect its many excellent frescoes; painted histories of St. Francis and St. Jerome, by Benozzo Gozzoli; saints, angels, and Scripture episodes by the gentle Tiberio d'Assisi. Full justice had been done to these, when a little boy, seeing us lingering outside the church of St. Chiara, asked whether we should not like to view the body of the saint. This privilege could be purchased at the price of a small fee. It was only necessary to call the guardian of her shrine at the high altar. Indolent, and in compliant mood, with languid curiosity and half an hour to spare, we assented. A handsome young man appeared, who conducted us with decent gravity into a little darkened chamber behind the altar. There he lighted wax tapers, opened sliding doors in what looked like a long coffin, and drew curtains. Before us in the dim light there lay a woman covered with a black nun's dress. Only her hands, and the exquisitely beautiful pale outline of her face (forehead, nose, mouth, and chin, modelled in purest outline, as though the injury of death had never touched her), were visible. Her closed eyes seemed to sleep. She had the perfect-peace of Luini's St. Catherine borne by the angels to her grave on Sinai. I have rarely seen anything which surprised and touched me

more. The religious earnestness of the young *custode*, the hushed adoration of the country-folk who had silently assembled round us, intensified the sympathy-inspiring beauty of the slumbering girl. Could Julia, daughter of Claudius, have been fairer than this maiden, when the Lombard workmen found her in her Latin tomb, and brought her to be worshipped on the Capitol? St. Chiara's shrine was hung round with her relics; and among these the heart extracted from her body was suspended. Upon it, apparently wrought into the very substance of the mummied flesh, were impressed a figure of the crucified Christ, the scourge, and the five *stigmata*. The guardian's faith in this miraculous witness to her sainthood, the gentle piety of the men and women who knelt before it, checked all expressions of incredulity. We abandoned ourselves to the genius of the place; forgot even to ask what Santa Chiara was sleeping here; and withdrew, toned to a not unpleasing melancholy. The true Saint Clair, the spiritual sister of St. Francis, lies in Assisi. I have often asked myself, Who then was this nun? What history had she? Is she a rival, or a counterfeit? But the problem, suspended by lack of active curiosity at Montefalco, has never since been solved. And I think now of this girl, as of a damsel of romance, a Sleeping Beauty in the wood of time, secluded from intrusive elements of fact, and folded in the love and faith of her own simple worshippers. Among the hollows of Arcadia, how many rustic shrines in ancient days held saints of Hellas, apocryphal like this, but halloved by tradition and enduring homage!

FOLIGNO.

IN the landscape of Raphael's votive picture known as the Madonna di Foligno, there is a town with a few towers, placed upon a broad plain at the edge of some blue hills. Allowing for that license as to details which imaginative masters permitted themselves in matters of subordinate importance, Raphael's sketch is still true to Foligno. The place has not materially changed since the beginning of the sixteenth century. Indeed, relatively to the state of Italy at large, it is still the same as in the days of ancient Rome. Foligno forms a station of commanding interest between Rome and the Adriatic upon the great Flaminian Way. At Foligno the passes of the Apennines debouch into the Umbrian plain, which slopes gradually toward the valley of the

Tiber, and from it the valley of the Nera is reached by an easy ascent beneath the walls of Spoleto. An army advancing from the north by the Metaurus and the Furlo Pass must find itself at Foligno; and the level champaign round the city is well adapted to the maintenance and exercises of a garrison. In the days of the republic and the empire, the value of this position was well understood; but Foligno's importance, as the key to the Flaminian Way, was eclipsed by two flourishing cities in its immediate vicinity, Hispellum and Mevania, the modern Spello and Bevagna. We might hazard a conjecture that the Lombards, when they ruled the duchy of Spoleto, following their usual policy of opposing new military centres to the ancient Roman municipia, encouraged Fulginium at the expense of her two neighbors. But of this there is no certainty to build upon. All that can be affirmed with accuracy is that in the Middle Ages, while Spello and Bevagna declined into the inferiority of dependent burghs, Foligno grew in power and became the chief commune of this part of Umbria. It was famous, during the last centuries of struggle between the Italian burghers and their native despots, for peculiar ferocity in civil strife. Some of the bloodiest pages in mediæval Italian history are those which relate the vicissitudes of the Trinci family, the exhaustion of Foligno by internal discord, and its final submission to the papal power. Since railways have been carried from Rome through Narni and Spoleto to Ancona and Perugia, Foligno has gained considerably in commercial and military status. It is the point of intersection for three lines; the Italian government has made it a great cavalry depôt, and there are signs of reviving traffic in its decayed streets. Whether the presence of a large garrison has already modified the population, or whether we may ascribe something to the absence of Roman municipal institutions in the far past, and to the savagery of the mediæval period, it is difficult to say. Yet the impression left by Foligno upon the mind is different from that of Assisi, Spello, and Montefalco, which are distinguished for a certain grace and gentleness in their inhabitants.

My window in the city wall looks southward across the plain to Spoleto, with Montefalco perched aloft upon the right, and Frevi on its mountain bracket to the left. From the topmost peaks of the Sabine Apennines, gradual, tender, slop-

ing lines descend to find their quiet in the valley of Clitumnus. The space between me and that distance is infinitely rich with every sort of greenery, dotted here and there with towers and relics of baronial houses. The little town is in commotion; for the working men of Foligno and its neighborhood have resolved to spend their earnings on a splendid *festa* — horse-races, and two nights of fireworks. The acacias and pawlonias on the ramparts are in full bloom of creamy white and lilac. In the glare of Bengal lights these trees, with all their pendulous blossoms, surpassed the most fantastic of artificial decorations. The rockets sent aloft into the sky amid that solemn Umbrian landscape were nowise out of harmony with nature. I have never sympathized with critics who resent the intrusion of fireworks upon scenes of natural beauty. The Giessbach, lighted up at so much per head on stated evenings, with a band playing and a crowd of cockneys staring, presents perhaps an incongruous spectacle. But where, as here at Foligno, a whole city has made itself a festival, where there are multitudes of citizens and soldiers and country people slowly moving and gravely admiring, with the decency and order characteristic of an Italian crowd, I have nothing but a sense of satisfaction.

It is sometimes the traveller's good fortune in some remote place to meet with an inhabitant who incarnates and interprets for him the *genius loci* as he has conceived it. Though his own subjectivity will assuredly play a considerable part in such an encounter, transferring to his chance acquaintance qualities he may not possess, and connecting this personality in some purely imaginative manner with thoughts derived from study, or impressions made by nature, yet the stranger will henceforth become the meeting-point of many memories, the central figure in a composition which derives from him its vividness. Unconsciously and innocently he has lent himself to the creation of a picture, and round him, as around the hero of a myth, have gathered thoughts and sentiments of which he had himself no knowledge. On one of these nights I had been threading the aisles of acacia trees, now glaring red, now azure, as the Bengal lights kept changing. My mind instinctively went back to scenes of treachery and bloodshed in the olden time, when Corrado Trinci paraded the mangled remnants of three hundred of his victims, heaped on mule-back, through

Foligno, for a warning to the citizens. As the procession moved along the ramparts, I found myself in contact with a young man, who readily fell into conversation. He was very tall, with mighty breadth of shoulders, and long, sinewy arms, like Michelangelo's favorite models. His head was small, curled over with crisp, black hair. Low forehead, and thick, level eyebrows absolutely meeting over intensely bright, fierce eyes. The nose descending straight from the brows, as in a statue of Hadrian's age. The mouth full-lipped, petulant, and passionate above a firm, round chin. He was dressed in the shirt, white trousers, and loose white jacket of a contadino; but he did not move with a peasant slouch, rather with the elasticity and alertness of an untamed panther. He told me that he was just about to join a cavalry regiment; and I could well imagine, when military dignity was added to that gait, how grandly he would go. This young man, of whom I heard nothing more after our half-hour's conversation among the crackling fireworks and roaring cannon, left upon my mind an indescribable impression of dangerousness — of "something fierce and terrible, eligible to burst forth." Of men like this, then, were formed the companies of adventure who flooded Italy with villany, ambition, and lawlessness in the fifteenth century. Gattamelata, who began life as a baker's boy at Narni, and ended it with a bronze statue by Donatello on the public square in Padua, was of this breed. Like this were the Trinci and their bands of murderers. Like this were the bravi who hunted Lorenzaccio to death at Venice. Like this was Pietro Paolo Baglioni, whose fault, in the eyes of Machiavelli, was that he could not succeed in being *perfettamente tristo*. Beautiful, but inhuman; passionate, but cold; powerful, but rendered impotent for firm and lofty deeds by immorality and treason; how many centuries of men like this once wasted Italy and plunged her into servitude! Yet what material is here, under sterner discipline, and with a nobler national ideal, for the formation of heroic armies! Of such stuff, doubtless, were the Roman legionaries. When will the Italians learn to use these men as Fabius or as Cæsar, not as the Vitelli and the Trinci used them? In such meditations, deeply stirred by the meeting of my own reflections with one who seemed to represent for me in life and blood the spirit of the place which had provoked them, I said farewell to Cavallucci, and returned

to my bedroom on the city wall. The last rockets had whizzed and the last cannons had thundered ere I fell asleep.

SPELLO.

SPELLO contains some not inconsiderable antiquities — the remains of a Roman theatre, a Roman gate with the heads of two men and a woman leaning over it, and some fragments of Roman sculpture scattered through its buildings. The churches, especially those of S. M. Maggiore and S. Francesco, are worth a visit for the sake of Pinturicchio. Nowhere except in the Piccolomini Library at Siena can that master's work in fresco be better studied than here. The satisfaction with which he executed the wall paintings in S. Maria Maggiore is testified by his own portrait introduced upon a panel in the decoration of the Virgin's chamber. The scrupulously rendered details of books, chairs, window-seats, etc., which he here has copied, remind one of Carpaccio's study of St. Benedict at Venice. It is all sweet, tender, delicate, and carefully finished; but without depth, not even the depth of Perugino's feeling. In S. Francesco, Pinturicchio, with the same meticulous refinement, painted a letter addressed to him by Gentile Baglioni. It lies on a stool before Madonna and her court of saints. Nicety of execution, technical mastery of fresco as a medium for Dutch detail-painting, prettiness of composition, and cheerfulness of coloring are noticeable throughout his work here rather than either thought or sentiment. S. Maria Maggiore can boast a fresco of Madonna between a young episcopal saint and Catherine of Alexandria, from the hand of Perugino. The rich, yellow harmony of its tones and the graceful dignity of its emotion, conveyed no less by a certain Raphaellesque pose and outline than by suavity of facial expression, enable us to measure the distance between this painter and his quasi-pupil Pinturicchio.

We did not, however, drive to Spello to inspect either Roman antiquities or frescoes, but to see an inscription on the city walls about Orlando. It is a rude Latin elegiac couplet, saying that, "from the sign below, men may conjecture the mighty members of Roland, nephew of Charles; his deeds are written in history." Three agreeable old gentlemen of Spello, who attended us with much politeness, and were greatly interested in my researches, pointed out a mark waist-high upon the wall, where Orlando's knee is

reported to have reached. But I could not learn anything about a phallic monolith, which is said by Guérin or Panizzi to have been identified with the Roland myth at Spello. Such a column either never existed here, or had been removed before the memory of the present generation.

EASTER MORNING AT ASSISI.

WE are in the lower church of S. Francesco. High mass is being sung, with orchestra and organ and a choir of many voices. Candles are lighted on the altar, over-canopied with Giotto's allegories. From the low southern windows slants the sun, in narrow bands, upon the many-colored gloom and embrowned glory of these painted aisles. Women in bright kerchiefs kneel upon the stones, and shaggy men from the mountains stand or lean against the wooden benches. There is no moving from point to point. Where we have taken our station, at the north-western angle of the transept, there we stay till mass be over. The whole low-vaulted building glows duskily; the frescoed roof, the stained windows, the figure-crowded pavements blending their rich but subdued colors, like hues upon some marvellous moth's wings, or like a deep-toned rainbow mist discerned in twilight dreams, or like such tapestry as Eastern queens, in ancient days, wrought for the pavilion of an empress. Forth from this maze of mingling tints, indefinite in shade and sunbeams, lean earnest, saintly faces — ineffably pure — adoring, pitying, pleading; raising their eyes in ecstasy to heaven, or turning them in ruth toward earth. Men and women of whom the world was not worthy — at the hands of those old painters they have received the divine grace, the dove-like simplicity, whereof Italians in the fourteenth century possessed the irrecoverable secret. Each face is a poem, the counterpart in painting to a chapter from the *Fioretti* di San Francesco. Over the whole scene — in the architecture, in the frescoes, in the colored windows, in the gloom, on the people, in the incense, from the chiming bells, through the music — flows one spirit: the spirit of him who was "the co-espoused, co-transferate with Christ;" the ardent, the radiant, the beautiful in soul; the suffering, the strong, the simple, the victorious over self and sin; the celestial who trampled upon earth and rose on wings of ecstasy to heaven; the Christ-inebriated saint of visions supersensual and life beyond the grave. Far

down below the feet of those who worship God through him, St. Francis sleeps; but his soul, the incorruptible part of him, the message he gave the world, is in the spaces round us. This is his temple. He fills it like an unseen God. Not as Phœbus or Athene, from their marble pedestals; but as a brooding spirit, felt everywhere, nowhere seized, absorbing in itself all mysteries, all myths, all burning exaltations, all abasements, all love, self-sacrifice, pain, yearning, which the thought of Christ, sweeping the centuries, hath wrought for men. Let, therefore, choir and congregation raise their voices on the tide of prayers and praises; for this is Easter morning. Christ is risen! Our sister, Death of the Body, for whom St. Francis thanked God in his hymn, is reconciled to us this day, and takes us by the hand, and leads us to the gate whence floods of heavenly glory issue from the faces of a multitude of saints. Pray, ye poor people; chant and pray. If all be but a dream, to wake from this were loss for you indeed!

PERUSIA AUGUSTA.

THE piazza in front of the Prefettura is my favorite resort on these nights of full moon. The evening twilight is made up partly of sunset fading over Thrasy-mene and Tuscany; partly of moonrise from the mountains of Gubbio and the passes toward Ancona. The hills are capped with snow, although the season is so forward. Below our parapets the bulk of S. Domenico, with its gaunt, perforated tower, and the finer group of S. Pietro, flaunting the arrowy *Pennacchio di Perugia*, jut out upon the spine of hill which dominates the valley of the Tiber. As the night gloom deepens, and the moon ascends the sky, these buildings seem to form the sombre foreground to some French etching. Beyond them spreads the misty, moon-irradiated plain of Umbria. Over all rise shadowy Apennines, with dim suggestions of Assisi, Spello, Foligno, Montefalco, and Spoleto on their basements. Little thin whiffs of breezes, very slight and scorching, flit across, and shiver as they pass from Apennine to plain. The slowly moving population—women in veils, men winter-mantled—pass to and fro between the buildings and the gray immensity of sky. Bells ring. The bugles of the soldiers blow retreat in convents turned to barracks. Young men roam the streets beneath, singing May songs. Far, far away upon the plain, red through the vitreous moon-

light ringed with thundery gauze, fires of unnamed castelli smoulder. As we lean from ledges eighty feet in height, gas vies with moon in checquering illuminations on the ancient walls; Etruscan mouldings, Roman letters, high-piled hovels, suburban world-old dwellings plastered like martins' nests against the masonry.

Sunlight adds more of detail to this scene. To the right of Subasio, where the passes go from Foligno towards Urbino and Ancona, heavy masses of thunder-cloud hang every day; but the plain and hill buttresses are clear in transparent blueness. First comes Assisi, with S. M. degli Angeli below; then Spello; then Foligno; then Trevi; and, far away, Spoleto; with, reared against those misty battlements, the village height of Montefalco—the "*ringhiera dell' Umbria*," as they call it in this country. By daylight, the snow on yonder peaks is clearly visible, where the Monti della Sibilla tower up above the sources of the Nera and Velino from frigid wastes of Norcia. The lower ranges seem as though painted, in films of airiest and palest azure, upon china; and then comes the broad, green champaign, flecked with villages and farms.

Just at the basement of Perugia winds Tiber, through willows and gray poplars, spanned by ancient arches of red brick, and guarded here and there by castellated towers. The mills beneath their dams and weirs are just as Raphael drew them; and the feeling of air and space reminds one, on each coign of vantage, of some Umbrian picture. Every hedgerow is hoary with May-bloom and honeysuckle. The oaks hang out their golden-dusted tassels. Wayside shrines are decked with laburnum boughs and iris blossoms plucked from the copse-woods, where spires of purple and pink orchis variegates the thin, fine grass. The land waves far and wide with young corn, emerald green beneath the olive-trees, which take, upon their under foliage, tints reflected from this verdure, or red tones from the naked earth. A fine race of *contadini*, with large, heroically graceful forms, and beautiful, dark eyes and noble faces, move about this garden, intent on ancient, easy tillage of the kind Saturnian soil.

LA MAGIONE.

On the road from Perugia to Cortona, the first stage ends at La Magione, a high hill village commanding the passage from the Umbrian champaign to the Lake of Thrasy-mene. It has a grim, square fort-

alice above it, now in ruins, and a stately castle to the south-east, built about the time of Braccio. Here took place that famous diet of Cesare Borgia's enemies, when the son of Alexander VI. was threatening Bologna with his arms, and bidding fair to make himself supreme tyrant of Italy in 1502. It was the policy of Cesare to fortify himself by reducing the fiefs of the Church to submission, and by rooting out the dynasties which had acquired a sort of tyranny in papal cities. The Varani of Camerino and the Manfredi of Faenza had been already extirpated. There was only too good reason to believe that the turn of the Vitelli at Città di Castello, of the Baglioni at Perugia, and of the Bentivogli at Bologna would come next. Pandolfo Petrucci at Siena, surrounded on all sides by Cesare's conquests, and specially menaced by the fortification of Piombino, felt himself in danger. The great house of the Orsini, who swayed a large part of the patrimony of St. Peter's, and were closely allied to the Vitelli, had even graver cause for anxiety. But such was the system of Italian warfare that nearly all these noble families lived by the profession of arms, and most of them were in the pay of Cesare. When, therefore, the conspirators met at La Magione, they were plotting against a man whose money they had taken, and whom they had hitherto aided in his career of fraud and spoliation.

The diet consisted of the Cardinal Orsini, an avowed antagonist of Alexander VI.; his brother Paolo, the chieftain of the clan; Vitellozzo Vitelli, lord of Città di Castello; Gian-Paolo Baglioni, made undisputed master of Perugia by the recent failure of his cousin Grifonetto's treason; Oliverotto, who had just acquired the march of Fermo by the murder of his uncle Giovanni da Fogliani; Ermes Bentivoglio, the heir of Bologna; and Antonio da Venafro, the secretary of Pandolfo Petrucci. These men vowed hostility on the basis of common injuries and common fear against the Borgia. But they were for the most part stained themselves with crime, and dared not trust each other, and could not gain the confidence of any respectable power in Italy except the exiled duke of Urbino. Procrastination was the first weapon used by the wily Cesare, who trusted that time would sow among his rebel captains suspicion and dissension. He next made overtures to the leaders separately, and so far succeeded in his perfidious policy as to draw Vitellozzo Vitelli, Oliverotto

da Fermo, Paolo Orsini, and Francesco Orsini, Duke of Gravina, into his nets at Sinigaglia. Under pretext of fair conference and equitable settlement of disputed claims, he possessed himself of their persons, and had them strangled—two upon December 31, and two upon January 18, 1503. Of all Cesare's actions, this was the most splendid for its successful combination of sagacity and policy in the hour of peril, of persuasive diplomacy, and of ruthless decision when the time to strike his blow arrived.

CORTONA.

AFTER leaving La Magione, the road descends upon the Lake of Thrasymene by oak woods full of nightingales. The lake lay basking, leaden-colored, smooth, and waveless, under a misty, rain-charged, sun-irradiated sky. At Passignano, close beside its shore, we stopped for midday. This is a little fishing village of very poor people, who live entirely by labor on the waters. They showed us huge eels coiled in tanks, and some fine specimens of the silvery carp—*reina del lago*. It was off one of the eels that we made our lunch; and taken, as he was, alive from his cool lodging, he furnished a series of dishes fit for a king.

Climbing the hill of Cortona seemed a quite interminable business. It poured a deluge. Our horses were tired, and one lean donkey, who after much trouble was produced from a farmhouse and yoked in front of them, rendered but little assistance.

Next day we duly saw the Muse and Lamp in the Museo, the Fra Angelicos, and all the Signorellis. One cannot help thinking that too much fuss is made nowadays about works of art—running after them for their own sakes, exaggerating their importance, and detaching them as objects of study, instead of taking them with sympathy and carelessness as pleasant or instructive adjuncts to sensation. Artists, historians of art, and critics are forced to isolate pictures; and it is of profit to their souls to do so. But simple folk, who have no aesthetic vocation, whether creative or critical, suffer more than is good for them by compliance with mere fashion. Sooner or later we shall return to the spirit of the ages which produced these pictures, and which regarded them with less of an industrious bewilderment than they evoke at present.

The Palace of the Commune at Cortona is interesting because of the shields

of Florentine governors, sculptured on blocks of grey stone, and inserted in its outer walls — Peruzzi, Albizzi, Strozzi, Salviati, among the more ancient, De' Medici at a later epoch. The revolutions in the republic of Florence may be read by a herald from these coats of arms and the dates beneath them.

The landscape of this Tuscan highland satisfies me more and more with sense of breadth and beauty. From S. Margherita above the town the prospect is immense and wonderful and wild — up into those brown, forbidding mountains, down to the vast plain, and over to the cities of Chiusi, Montepulciano, and Foiano. The jewel of the view is Trasimeno, a silvery shield encased with serried hills, and set upon one corner of the scene, like a precious thing apart and meant for separate contemplation. There is something in the singularity and circumscribed completeness of the mountain-girded lake, diminished by distance, which would have attracted Leonardo da Vinci's pencil, had he seen it.

Cortona seems desperately poor, and the beggars are intolerable. One little blind boy, led by his brother, both frightfully ugly and ragged urchins, pursued us all over the city, incessantly whining "Signore Padrone!" It was only on the threshold of the inn that I ventured to give them a few coppers, for I knew well that any public beneficence would raise the whole swarm of the begging population round us. Sitting later in the day upon the piazza of S. Domenico, I saw the same blind boy taken by his brother to play. The game consisted in the little creature throwing his arms about the trunk of a big tree, and running round and round it, clasping it. This seemed to make him quite inexpressibly happy. His face lit up and beamed with that inner beatitude blind people show — a kind of rapture shining over it, as though nothing could be more altogether delightful. This little boy had the small-pox at eight months, and has never been able to see since. He looks sturdy, and may live to be of any age — doomed always, is that possible, to beg?

CHIUSI.

WHAT more enjoyable dinner can be imagined than a flask of excellent Montepulciano, a well-cooked steak, and a little goat's cheese in the inn of the Leone d'Oro at Chiusi? The windows are open, and the sun is setting. Monte Cetona bounds the view to the right, and the

wooded hills of Città della Pieve to the left. The deep green dimpled valley goes stretching away toward Orvieto; and at its end a purple mountain mass, distinct and solitary, which may peradventure be Soracte! The near country is broken into undulating hills, forested with fine olives and oaks; and the composition of the landscape, with its crowning villages, is worthy of a background to an Umbrian picture. The breadth and depth and quiet which those painters loved, the space of lucid sky, the suggestion of winding waters in verdant fields, all are here. The evening is beautiful — golden light streaming softly from behind us on this prospect, and gradually mellowing to violet and blue with stars above.

At Chiusi we visited several Etruscan tombs, and saw their red and black scrawled pictures. One of the sepulchres was a well-jointed vault of stone with no wall-paintings. The rest had been scooped out of the living tufa. This was the excuse for some pleasant hours spent in walking and driving through the country. Chiusi means for me the mingling of grey olives and green oaks in limpid sunlight; deep leafy lanes; warm sandstone banks; copses with nightingales and cyclamens and cuckoos; glimpses of a silvery lake; blue shadowy distances; the bristling ridge of Monte Cetona; the comical towers Becca di Questo and Becca di Quello over against each other on the borders; ways winding among hedgerows like some bit of England in June, but not so full of flowers. It means all this, I fear, for me far more than theories about Lars Porsenna and Etruscan ethnology.

GUBBIO.

GUBBIO ranks among the most ancient of Italian hill towns. With its back set firm against the spine of central Apennines, and piled, house over house, upon the rising slope, it commands a rich tract of upland champaign, bounded southward toward Perugia and Foligno by peaked and rolling ridges. This amphitheatre, which forms its source of wealth and independence, is admirably protected by a chain of natural defences; and Gubbio wears a singularly old-world aspect of antiquity and isolation. Houses climb right to the crests of gaunt bare peaks; and the brown mediæval walls with square towers which protected them upon the mountain-side, following the inequalities of the ground, are still a marked feature in the landscape. It is a town of steep streets and staircases, with quaintly framed

prospects, and solemn vistas opening at every turn across the lowland. One of these views might be selected for especial notice. In front, irregular buildings losing themselves in country as they straggle by the roadside; then the open post-road with a cypress to the right; afterwards, the rich green fields, and on a bit of rising ground an ancient farmhouse with its brown dependencies; lastly, the blue hills above Fossato, and far away a wrack of trembling clouds. All this enclosed by the heavy archway of the Porta Romana, where sunlight and shadow chequer the mellow tones of a dim fresco, indistinct with age, but beautiful.

Gubbio has not greatly altered since the Middle Ages. But poor people are now living in the palaces of noblemen and merchants. These new inhabitants have walled up the fair arched windows and slender portals of the ancient dwellers, spoiling the beauty of the streets without materially changing the architectural masses. In that witching hour when the Italian sunset has faded, and a solemn grey replaces the glowing tones of daffodil and rose, it is not difficult, here dreaming by oneself alone, to picture the old noble life — the ladies moving along those open loggias, the young men in plumed caps and curling hair with one foot on those doorsteps, the knights in armor and the sumpter mules and red-robed cardinals defiling through those gates into the courts within. The modern bricks and mortar with which that picturesque scene has been overlaid, the ugly oblong windows and bright green shutters which now interrupt the flowing lines of arch and gallery; these disappear beneath the fine remembered touch of a sonnet sung by Folgore, when still the parties had their day, and this deserted city was the centre of great aims and throbbing aspirations.

The names of the chief buildings in Gubbio are strongly suggestive of the Middle Ages. They abut upon a Piazza de' Signori. One of them, the Palazzo del Municipio, is a shapeless, unfinished block of masonry. It is here that the Eugubine tables, plates of brass with Umbrian and Roman incised characters, are shown. The Palazzo de' Consoli has higher architectural qualities, and is indeed unique among Italian palaces for the combination of massiveness with lightness in a situation of unprecedented boldness. Rising from enormous substructures morticed into the solid hillside, it rears its vast rectangular bulk to a giddy height above the town; airy loggias

imposed on great forbidding masses of brown stone, shooting aloft into a light aerial tower. The empty halls inside are of fair proportions and a noble size, and the views from the open colonnades in all directions fascinate. But the final impression made by the building is one of square, tranquil, massive strength — perpetuity embodied in masonry — force suggesting facility by daring and successful addition of elegance to hugeness. Vast as it is, this pile is not forbidding, as a similarly weighty structure in the north would be. The fine quality of the stone and the delicate though simple mouldings of the windows give it an Italian grace.

These public palaces belong to the age of the communes, when Gubbio was a free town, with a policy of its own, and an important part to play in the interne-cine struggles of pope and Empire, Guelph and Ghibelline. The ruined, deserted, degraded Palazzo Ducale reminds us of the advent of the despots. It has been stripped of all its tarsia-work and sculpture. Only here and there a Fe. D., with the blazing bomb of Federigo di Montefeltro, remains to show that Gubbio once became the fairest fief of the Urbino duchy. S. Ubaldo, who gave his name to this duke's son, was the patron of Gubbio, and to him the cathedral is dedicated — one low enormous vault, like a cellar or feudal banquetting hall, roofed with a succession of solid Gothic arches. This strange old church, and the House of the Canons, buttressed on the hill beside it, have suffered less from modernization than most buildings in Gubbio. The latter, in particular, helps one to understand what this city of grave palazzi must have been, and how the mere opening of old doors and windows would restore it to its primitive appearance. The House of the Canons has, in fact, not yet been given over to the use of middle-class and proletariat.

At the end of a day in Gubbio, it is pleasant to take our ease in the primitive hostelry, at the back of which foams a mountain-torrent, rushing downward from the Apennines. The Gubbio wine is very fragrant, and of a rich, ruby color. Those to whom the tints of wine and jewels give a pleasure not entirely childish, will take delight in its specific blending of tawny hues with rose. They serve the table still, at Gubbio, after the antique Italian fashion, covering it with a cream-colored linen cloth bordered with coarse lace — the creases of the press, the scent of old herbs from the wardrobe, are still upon it

— and the board is set with shallow dishes of warm, white earthenware, basket-worked in open lattice at the edge, which contain little separate messes of meat, vegetables, cheese, and comfits. The wine stands in strange, slender phials of smooth glass, with stoppers; and the amber-colored bread lies in fair round loaves upon the cloth. Dining thus is like sitting down to the supper at Emmaus, in some picture of Gian Bellini or of Massolino. The very bareness of the room—its open rafters, plastered walls, primitive settees, and red-brick floor, on which a dog sits waiting for a bone—enhances the impression of artistic delicacy in the table.

FROM GUBBIO TO FANO.

THE road from Gubbio, immediately after leaving the city, enters a narrow Alpine ravine, where a thin stream dashes over dark, red rocks, and pendent saxifrages wave to the winds. The carriage in which we travelled at the end of May, one morning, had two horses, which our driver soon supplemented with a couple of white oxen. Slowly and toilsomely we ascended between the flanks of barren hills—gaunt masses of crimson and grey crag, clothed at their summits with short turf and scanty pasture. The pass leads first to the little town of Scheggia, and is called the Monte Calvo, or bald mountain. At Scheggia, it joins the great Flaminian Way, or north road of the Roman armies. At the top there is a fine view over the conical hills that dominate Gubbio, and, far away, to noble mountains above the Furlo and the Foligno line of railway to Ancona. Range rises over range, crossing at unexpected angles, breaking into sudden precipices, and stretching out long, exquisitely modelled outlines, as only Apennines can do, in silvery sobriety of colors toned by clearest air. Every square piece of this austere, wild landscape forms a varied picture, whereof the composition is due to subtle arrangements of lines always delicate; and these lines seem somehow to have been determined in their beauty by the vast antiquity of the mountain system, as though they all had taken time to choose their place and wear down into harmony. The effect of tempered sadness was heightened for us by stormy lights and dun clouds, high in air, rolling vapors and flying shadows, over all the prospect, tinted in ethereal grisaille.

After Scheggia, one enters a land of meadow and oak-trees. This is the sa-

cred central tract of Jupiter Apenninus, whose fane—

*Delubra Jovis saxoque minantes
Apenninigenis cultae pastoribus arae*

—once rose behind us on the bald Iguvian summits. A second little pass leads from this region to the Adriatic side of the Italian watershed, and the road now follows the Barano downward toward the sea. The valley is fairly green with woods, where mistletoe may here and there be seen on boughs of oak, and rich with cornfields. Cagli is the chief town of the district, and here they show one of the best pictures left to us by Raphael's father, Giovanni Santi. It is a Madonna, attended by St. Peter, St. Francis, St. Dominic, St. John, and two angels. One of the angels is traditionally supposed to have been painted from the boy Raphael, and the face has something which reminds us of his portraits. The whole composition, excellent in modelling, harmonious in grouping, soberly but strongly colored, with a peculiar blending of dignity and sweetness, grace and vigor, makes one wonder why Santi thought it necessary to send his son from his own workshop to study under Perugino. He was himself a master of his art, and this, perhaps the most agreeable of his paintings, has a masculine sincerity which is absent from at least the later works of Perugino.

Some miles beyond Cagli, the real pass of the Furlo begins. It owes its name to a narrow tunnel bored by Vespasian in the solid rock, where limestone crags descend on the Barano. The Romans called this gallery *Petra Pertusa*, or *Intercisa*, or more familiarly *Forulus*, whence comes the modern name. Indeed, the stations on the old Flaminian Way are still well-marked by Latin designations; for Cagli is the ancient *Calles*, and Fossombrone is *Forum Sempronii*, and Fano the *Fanum Fortunæ*. Vespasian commemorated this early achievement in engineering by an inscription carved on the living stone, which still remains; and Claudian, when he sang the journey of his emperor Honorius from Kimini to Rome, speaks thus of what was even then an object of astonishment to travellers:—

*Laetior hinc fano recipit fortuna vetusto,
Despiciturque vagus praeurpta valle Metaurus,
Qua mons arte patens vivo se perforat arcu
Admittitque viam sectae per viscera rupis.*

The Forulus itself may now be matched, on any Alpine pass, by several tunnels of far mightier dimensions; for it is narrow,

and does not extend more than one hundred and twenty-six feet in length. But it occupies a fine position at the end of a really imposing ravine. The whole Furlo Pass might, without too much exaggeration, be described as a kind of Cheddar on the scale of the Via Mala. The limestone rocks, which rise on either hand above the gorge to an enormous height, are noble in form and solemn, like a succession of gigantic portals, with stupendous flanking obelisks and pyramids. Some of these crag-masses rival the fantastic cliffs of Capri, and all consist of that southern mountain limestone which changes from pale yellow to blue gray and dusky orange. A river roars precipitately through the pass, and the roadsides wave with many sorts of campanulas — a profusion of azure and purple bells upon the hard white stone. Of Roman remains there is still enough (in the way of Roman bridges and bits of broken masonry) to please an antiquarian's eye. But the lover of nature will dwell chiefly on the picturesque qualities of this historic gorge, so alien to the general character of Italian scenery, and yet so remote from anything to which Swiss travelling accustoms one.

The Furlo breaks out into a richer land of mighty oaks and waving cornfields, a fat pastoral country, not unlike Devonshire in detail, with green uplands, and wild-rose tangled hedgerows, and much running water, and abundance of summer flowers. At a point above Fossombrone, the Barano joins the Metauro, and here one has a glimpse of far-away Urbino, high upon its mountain eyrie. It is so rare, in spite of immemorial belief, to find in Italy a wilderness of wild flowers, that I feel inclined to make a list of those I saw from our carriage windows as we rolled down lazily along the road to Fossombrone. Broom, and cytissus, and hawthorn mingled with roses, gladiolus, and saintfoil. There were orchises, and clematis, and privet, and wild-vine vetches of all hues, red poppies, sky-blue cornflowers, and lilac pimpernel. In the rougher hedges, dogwood, honeysuckle, pyracanth, and acacia made a network of white bloom and blushes. Milkworths of all bright and tender tints combined with borage, iris, hawkweeds, harebells, crimson clover, thyme, red snapdragon, golden asters, and dreamy love-in-a-mist, to weave a marvellous carpet such as the looms of Shiraz or of Cashmere never spread. Rarely have I gazed on Flora in such riot, such luxuriance, such self-abandonment to joy.

The air was filled with fragrances. Songs of cuckoos and nightingales echoed from the copses on the hillsides. The sun was out, and dancing over all the landscape.

After all this, Fano was very restful in the quiet sunset. It has a sandy stretch of shore, on which the long, green-yellow rollers of the Adriatic broke into creamy foam, beneath the waning saffron light of Peraso and the rosy rising of a full moon. This Adriatic sea carries an English mind home to many a little watering-place upon our coast. In color and the shape of waves it resembles our Channel.

The seashore is Fano's great attraction; but the town has many churches, and some creditable pictures, as well as Roman antiquities. Giovanni Santi may here be seen almost as well as at Cagli; and of Perugino there is one truly magnificent altar-piece — lunette, great centre panel, and predella — dusty in its present condition, but splendidly painted, and happily not yet restored or cleaned. It is worth journeying to Fano to see this. Still better would the journey be worth the traveller's while if he could be sure to witness such a game of *ballone* as we chanced upon in the Via dell' Arco di Augusto — lads and grown men, tightly girt, in shirt-sleeves, driving the great ball aloft into the air with cunning bias and calculation of projecting house-eaves. I do not understand the game; but it was clearly played something after the manner of our football, that is to say, with sides, and front and back players so arranged as to cover the greatest number of angles of incidence on either wall.

Fano still remembers that it is the Fane of Fortune. On the fountain in the market-place stands a bronze Fortuna, slim and airy, offering her veil to catch the wind. May she long shower health and prosperity upon the modern watering-place of which she is the patron saint!

J. A. S.

From The Nineteenth Century.
INTELLIGENCE OF ANTS.

II.

I HAVE now presented some of the most curious and interesting facts concerning the intelligence of ants in general; I shall next proceed to state some of the more remarkable facts concerning the intelligence of certain species of ants in particular.

Leaf-cutting Ants of the Amazon. —

The mode of working practised by these ants is thus described by Bates :—

They mount a tree in multitudes. . . . Each one places itself on the surface of a leaf, and cuts with its sharp scissors-like jaws a nearly semicircular incision on the upper side ; it then takes the edge between its jaws, and by a sharp jerk detaches the piece. Sometimes they let the leaf drop to the ground, where a little heap accumulates, until carried off by another relay of workers ; but generally each marches off with the piece it has operated on, and, as all take the same road to the colony, the path they follow becomes in a short time smooth and bare, looking like the impression of a cart-wheel through the herbage.

Other observers have since said that this herbage is regularly felled by the ants in order to make a road. Each ant carries its semicircular piece of leaf upright over its head, so that the home-returning train is rendered very conspicuous. Keener observation shows that this home-returning, or load-carrying, train of workers keeps to one side of the road, while the outgoing, or empty-handed, train keeps to the other side ; so that on every road there is a double train of ants going in opposite directions. When the leaves arrive at the nest they are received by a smaller kind of worker, whose duty it is to cut up the pieces into still smaller fragments, whereby the leaves seem to be better fitted for the purpose to which, as we shall presently see, they are put. These smaller workers never take any part in the outdoor labor ; but they occasionally leave the nest, apparently for the sole purpose of obtaining air and exercise, for when they leave the nest they merely run about doing nothing, and frequently, as in mere sport, mount some of the semicircular pieces of leaf, which the carrier ants are taking to the nest, and so get a ride home.

From his continued observation of these ants Bates concludes—and his opinion has been corroborated by that both of Belt and Müller—that the object of all this labor is a highly remarkable one. The leaves when gathered do not themselves appear to be of any service to the ants as food ; but when cut into small fragments, and stored away in the nests, they become suited as a nidus for the growth of a minute kind of fungus on which the ants feed. We may therefore call these insects "gardening ants," inasmuch as all their labor is given to the rearing of nutritious vegetables on artificially prepared soil. They are not particular as to the material which they collect

and store up for soil, provided that it is a material on which the fungus will grow—orange-peel, certain flowers, etc., being equally acceptable to them. But they are very particular regarding the ventilation of their underground storehouses, on a suitable degree of which the successful growth of the fungus presumably depends. They therefore have numerous holes or ventilating shafts which lead up to the surface from the storehouses or underground gardens, and these they either open or close according to the horticultural requirements as regards temperature and moisture. If the leaves are either too damp or too dry, they will not grow the fungus, and therefore in gathering the leaves the ants are very particular that they should neither be the one nor the other. Thus Bates observed :—

If a sudden shower should come on, the ants do not carry the wet pieces into the burrows, but throw them down near the entrances ; should the weather clear up again, these pieces are picked up when nearly dried, and taken inside ; should the rain, however, continue, they get sodden down into the ground, and are left there. On the contrary, in dry and hot weather, when the leaves would get dried up before they could be conveyed to the nest, the ants, when in exposed situations, do not go out at all during the hot hours, but bring in their leafy burdens in the cool of the day and during the night.

Dr. Ellendorf made the experiment of interrupting the advance of a column of these ants, with the interesting result which he thus describes in a letter to Büchner :—

Thick dry grass stood on either side of their narrow road, so that they could not pass through it with the load on their heads. I placed a dry branch, nearly a foot in diameter, obliquely across their path, and pressed it down so tightly on the ground that they could not pass underneath. The first comers crawled beneath the branch as far as they could, and then tried to climb over, but failed owing to the weight on their heads. Meanwhile the unloaded ants from the other side came on, and when these succeeded in climbing over the bough there was such a crush that the unladen ants had to clamber over the laden, and the result was a terrible muddle. I now walked along the train, and found that all the ants with their bannerets on their heads were standing still, thickly pressed together, awaiting the word of command from the front. When I turned back to the obstacle, I was astonished to see that the loads had been laid aside by more than a foot's length of the column, one imitating the other. And now work began on both sides of the branch, and in about half an hour a tunnel was made beneath it. Each ant

then took up its burden again, and the march was resumed in the most perfect order.

The operations here described show clearly that these ants act upon the principle of the division of labor. In this connection I may also quote an observation of Belt, which shows this fact in perhaps even a stronger light. He says:

Between the old burrows and the new one was a steep slope. Instead of descending this with their burdens, they cast them down on the top of the slope, whence they rolled down to the bottom, where another relay of laborers picked them up and carried them to the new burrow. It was amusing to watch the ants hurrying out with bundles of food, dropping them over the slope, and rushing back immediately for more.

Ants of this genus are very clever at making tunnels. The Rev. H. Clark says that in one case they have made a tunnel of enormous length under the river Parahylia, where this is as broad as the Thames at London — their object being to reach a storehouse which is on the opposite bank. This statement is not to be considered so incredible as it at first sight unquestionably appears, for Bates has seen the subterranean passages of these ants extending to a distance of seventy yards.

Harvesting Ants. — The harvesting ants belong almost exclusively to a single genus, which however comprises a number of species distributed in localized areas over all the four quarters of the globe. Their distinctive habits consist in gathering nutritious seeds of grasses during summer, and storing them in granaries for winter consumption. We owe our present knowledge concerning these insects mainly to Moggridge, who studied them in the south of Europe, Lincecum and McCook, who studied them in Texas; Colonel Sykes and Dr. Jerdon also made some observations upon them in India. They likewise occur in Palestine, where they were clearly known to Solomon and other writers of antiquity, whose claim to accurate observation in this matter has within the last few years been amply vindicated, after having been for many years discredited, on account chiefly of the adverse statements of Huber.

Moggridge found that from the nest in various directions there proceed outgoing trains, which may be thirty or more yards in length, and each consisting of a double row of ants moving in opposite directions. Like the leaf-cutting ants, those composing the outgoing train are empty-handed,

while those composing the incoming train are laden. But here the burdens are grass-seeds. At their terminations in the foraging ground, or ant-fields, the insects composing these columns disperse by hundreds among the seed-yielding grasses. They then ascend the stems of the grasses, and, seizing the seed or capsule in their jaws, fix their hind legs firmly as a pivot, round which they turn and turn till the stalk is twisted off. The ant then descends the stem,

patiently backing and turning upwards again as often as the clumsy and disproportionate burden becomes wedged between the thickly-set stalks, and joins the line of its companions to the nest. . . . Two ants sometimes combine their efforts, when one stations itself near the base of the peduncle, and gnaws it at the point of greatest tension, while the other hauls upon and twists it. . . . I have occasionally seen ants engaged in cutting the capsules of certain plants, drop them, and allow their companions below to carry them away; and this corresponds with the curious account given by Ælian of the manner in which the spikelets of corn are severed and thrown down "to the people below."

As further evidence that these insects well understand the advantages arising from the division of labor, I may quote one or two other observations. Thus Moggridge once saw a dead grasshopper carried into a nest of harvesting ants by the following means: —

It was too large to pass through the door, so they tried to dismember it. Failing in this, several ants drew the wings and legs as far back as possible, while others gnawed through the muscles where the strain was greatest. They succeeded at last in pulling it in.

Again, Lespis says of the harvesting ant that,

if the road from the place where they are gathering their harvest to the nest is very long, they make regular depots for their provisions under large leaves, stones, or other suitable places, and let certain workers have the duty of carrying them from depot to depot.

No less, therefore, than the leaf-cutting ants already described, do these harvesting ants appreciate the benefits arising from the division of labor; and, as we shall presently see, there is a kind of ant exhibiting widely different habits, which shows appreciation of this principle in an even higher degree.

When the grain is taken into their nest by the harvesters, it is stored in regular granaries, but not until it has been denuded of its "husks" or "chaff." The

denuding process, which corresponds to threshing, is carried on below ground, and the chaff is brought up to the surface, where it is laid in heaps to be blown away by the wind. It is not yet understood why the seed, when thus stored in subterranean chambers just far enough below the surface to favor germination, does not germinate. Moggridge proved that the vitality of the seeds is not impaired, for he grew some plants from seeds taken from the granaries; and he also found that the seeds would germinate even in the granaries, if the ants were prevented from obtaining access to them for two or three days. The non-germination of the seeds must, therefore, be due to some influence exerted by the ants. Moggridge thought this influence might be the exhalations from the ants, and so tried enclosing some seeds in a bottled test tube, containing also earth and ants. The seeds, however, sprouted; and even an atmosphere of formic acid vapor was found not to prevent germination. Probably, therefore, the ants in their granaries do something to the seeds for the express purpose of preventing germination; and, if so, it would be interesting to botanists to ascertain what this process can be.

But, be this as it may, there is no doubt that the ants are fully aware of the importance in this connection of keeping their garnered seeds as dry as possible; for when the latter prove over-moist after collection, or have been subsequently wetted by soaking rains, the insects bring them up to the surface and spread them out to dry, to be again brought into the nest after a sufficient exposure.

Lastly, Moggridge observed that the process, whatever it is, whereby the ants prevent germination, is not invariably successful, but that a small percentage of stored seeds sometimes do begin to germinate. When this was the case, he also observed the highly interesting fact that the ants then knew the most effective method of checking further germination, for he found that in these cases they gnawed off the tip of the sprouting radicle. This fact deserves to be considered as one of the most remarkable among the many remarkable facts of ant psychology.

Passing on now to the harvesting ants of the New World, the insects here remove all the herbage above their nest in the form of a perfect circle, or "disk," fifteen to twenty feet in diameter. Every grass or weed within the disk is carefully felled, and, as the nests are situated in

thickly-grown localities, the effect of the bald or shaven disk is highly conspicuous and peculiar, exactly resembling in miniature the "clearings" which are made by settlers in the backwoods. The disk, however, is not merely cleared of herbage, but also carefully levelled — all inequalities of the surface being reduced by pellets of soil being built into the hollows to an extent sufficient to make a uniformly flat surface. In the centre of the disk is the gateway of the nest. From the disk in various directions there radiate out-roads or avenues, which are cleared and smoothed like the disk. These roads course through the thick grass, branching and narrowing as they go, till they eventually taper away. They are usually four to seven inches wide at their origin, and may be from sixty to three hundred feet in length. Along these roads there is always passing during the daytime a constant double stream of ants, one being laden and the other not.

In their manner of gathering and garnering grain these harvesters resemble in general the harvesters of Europe; but it is alleged by Dr. Lincecum that in one respect their habits manifest an astonishing, and indeed well-nigh incredible, advance upon those of their European allies. For this observer, who, it must be remembered, was the first to call attention to these ants in the New World, and whose other observations, extending over a number of years, have since been fully confirmed — this observer states in the most positive terms that the ants actually sow the seeds of a certain plant called the ant-rice, for the purpose of subsequently reaping a harvest of grain; hence these ants have been called the "agricultural ants." Now there is no doubt, from the subsequent observations of M'Cook and others, that the ant-disks do very frequently support this peculiar kind of grass, and that the ants are particularly fond of its seed. Nevertheless, M'Cook did not himself witness the process of sowing, although he is not disposed to doubt the statements of his predecessor upon the subject. These statements, as already observed, are most emphatic and precise — Lincecum saying, in italics, that he knows and is certain about the fact; but until corroborated it is safest to regard the fact as not yet fully established.

Honey-making Ants. — These ants are found in Texas and New Mexico. Their remarkable habits have been observed by Captain Fleeson, who communicated his observations to Mr. Darwin.

The community consists of three distinct kinds of ants, which appear to belong to two distinct genera. These are:

I. Yellow workers; nurses and feeders of II.

II. Yellow honey-makers; sole function to secrete a kind of honey in their large globose abdomens, on which the other ants are supposed to feed. They never quit the nest, and are fed and tended by I.

III. Black workers; guards and purveyors, which surround the nests as sentinels, and also forage for the food required for I. They are much larger and stronger than either I. or II., and are provided with very formidable mandibles.

The nest is in the form of an absolutely perfect square, of which each side measures from four to five feet, and the surface of which is kept quite unbroken save at two points, at each of which there is a very minute hole or entrance. One of these minute holes occurs near the west side of the square, and the other near the south-east corner; for it must be remarked that the square is always built with precise reference to the points of the compass, in such a way that one side faces due north, and consequently the others due south, east, and west. These boundaries are rendered very conspicuous by the guard of black workers or soldiers (III.), which continuously parade round three of the sides in a close double line of defence, moving in opposite directions. This sentry path occupies the north, east, and west boundaries, the south side of the square being left open; but if an enemy approaches on this, or any other side, a number of the guards leave their stations and sally forth to face the foe, raising themselves on their hind legs on meeting the enemy, and moving their large mandibles in defiance. After tearing the enemy to pieces the guards return to their places in the line of defence, their object in destroying any insect or other small intruders being defence of the encampment, and not the obtaining of food.

The southern side of the square encampment, or rather fortress, is left open as just described in order to admit of a free entry of supplies. While some of the black workers are on duty as guard, another and larger division are engaged on duty as purveyors. These enter and leave the quadrangle by its south-west corner in a double line (one laden and the other not), which follows exactly the diagonal of the square to its central point, where all the booty, consisting of flowers

and aromatic leaves, is deposited in a heap. Passing from this central heap to the entrance at the south-east corner of the quadrangle, and therefore occupying the other semi-diagonal of the square, there is another double line of workers constantly engaged in carrying the booty from the central deposit into the store-houses below ground. These workers are exclusively composed of Class II., whose whole life is therefore spent in running backwards and forwards upon this semi-diagonal of the square, carrying in food and feeding Class I. No black ant is ever seen on the eastern diagonal, and no yellow ant is ever seen on the western; but each keeps to his own separate station, and here works with a steadfastness and apparent adherence to discipline which are not less remarkable than those exhibited by the sentries. The western hole before mentioned seems to be intended only as a ventilating shaft; it is never used as a gateway.

Section of the nest reveals, besides passages and galleries, a small chamber, across which is spread, like a spider's web, a network of squares spun by the insects. In each of these squares, supported by the web, sits one of the honey-secreting ants (II.). Here the honey-makers live in perpetual confinement, and receive a constant supply of flowers, pollen, etc., which is continually being brought them by I., and which, by a process of digestion and secretion, they convert into honey. It is particularly noteworthy that in this truly wonderful exhibition of social co-operation, the black and yellow workers appear to belong to two distinct genera; for hitherto this is the only case known of two distinct species of animals co-operating for a common end.

Ecitons.—We have lastly to consider the most astonishing insects, if not the most astonishing animals, in the world. These are the so-called "foraging," or, as they might more appropriately be called, the military ants of the Amazon. They belong to several species of the same genus, and have been carefully watched by Bates, Belt, and other naturalists. The following facts must therefore be regarded as fully established.

Eciton legionis moves in enormous armies, and everything that these insects do is done with the most perfect instinct of military organization. The army marches in the form of a rather broad and regular column, hundreds of yards in length. The object of the march is to capture and plunder other insects, etc.,

for food, and as the well-organized host advances, its devastating legions set all other terrestrial life at defiance. From the main column there are sent out smaller lateral columns, the composing individuals of which play the part of scouts—branching off in various directions, and searching about with the utmost activity for insects, grubs, etc., over every log and under every fallen leaf. If prey is found in sufficiently small quantities for them to manage alone, it is immediately seized and carried to the main column; but if the amount is too large for the scouts themselves to deal with, messengers are sent back to the main column, whence there is immediately despatched a detachment large enough to cope with the requirements. Insects or other prey which, when killed, are too large for single ants to carry, are torn in pieces, and the pieces conveyed back to the main army by different individuals. Many insects in trying to escape run up bushes and shrubs, where they are pursued from branch to branch and twig to twig by their remorseless enemies, till on arriving at some terminal ramification they must either submit to immediate capture by their pursuers, or drop down amid the murderous hosts beneath. As already stated, all the spoils which are taken by the scouts, or by the detachments sent out in answer to their demands for assistance, are immediately taken back to the main army, or column. When they arrive there they are conveyed to the rear of that column by two smaller columns of carriers, which are constantly running in two double rows (one of each being laden and the other not) on either side of the main column. On either side of the main column there are also constantly running up and down a few individuals of smaller size, lighter color, and having larger heads than the other ants. These appear to perform the duty of officers, for they never leave their stations, and while actively running up and down the outsides of the column, they seem intent only on maintaining order in the march—stopping every now and then to touch some member of the rank and file with their antennæ, as if giving directions.

When the scouts discover a wasp's nest in a tree, a strong force is sent out from the main army, the nest is pulled to pieces, and all the larvæ in the nest are carried by the carrier columns to the rear of the army, while the wasps fly around defenceless against the invading multitudes. Or, if the nest of any other spe-

cies of ant is found, a similarly strong force is sent out, or even the whole army may be deflected towards it, when with the utmost energy the innumerable insects set to work to sink shafts and dig mines till the whole nest is rifled of its contents. In these mining operations the ecitons work with an extraordinary display of organized co-operation; for those low down in the shafts do not lose time by carrying up the earth which they excavate, but pass on the pellets to those above, and the ants on the surface, when they receive the pellets, carry them only just far enough to insure that they shall not roll back again into the shaft, and, after having deposited them at a safe distance, immediately hurry back for more.

The ecitons have no fixed nest themselves, but live, as it were, on a perpetual campaign. At night, however, they call a halt and pitch a camp. For this purpose they usually select a piece of broken ground, in the interstices of which they temporarily store their plunder. In the morning the army is again on the march, and before an hour or two has passed not a single ant is to be seen where thousands and millions had previously covered the ground.

The habits of *E. humana* and *E. drepanophora* are in general similar to those of the species just described. The latter, however, march in a narrower column (only four to six deep), which is therefore proportionally longer—sometimes extending to over half a mile. Bates tried the effect of interfering with a column of this species by abstracting an individual from it. "News of the disturbance was quickly communicated to a distance of several yards to the rear, and the column at that point commenced retreating." It was also this species that the same naturalist describes as enjoying periods of leisure and recreation when they call a halt in "the sunny nooks of the forest." On such occasions

the main column of the army and the branch columns were in their ordinary relative positions; but, instead of pressing forward eagerly and plundering right and left, they seemed to have been all smitten with a sudden fit of laziness. Some were walking slowly about, others were brushing their antennæ with their fore feet; but the drollest sight was their cleaning each other. . . . It is probable that these hours of relaxation and cleansing may be indispensable to the effective performance of their harder burdens; but whilst looking at them, the conclusion that they were engaged merely in play was irresistible.

E. predator differs from the others of its genus in not hunting in columns, but "in dense phalanxes consisting of myriads of individuals."

Nothing [says Bates] in insect movements is more striking than the rapid march of these large and compact bodies. Wherever they pass, all the rest of the animal world is thrown into a state of alarm. They stream along the ground and climb to the summit of all the lower trees, searching every leaf to its apex, and whenever they encounter a mass of decaying vegetable matter where booty is plentiful they concentrate, like other ecitons, all their forces upon it, the dense phalanx of shining and quickly moving bodies, as it spreads over the surface, looking like a flood of dark-red liquid. They soon penetrate every part of the confused heap, and then, gathering together again in marching order, onward they move.

A phalanx occupies from four to six square yards of ground, and the ants composing it do not move "altogether in one straightforward direction, but in variously spreading contiguous columns, now separating a little from the general mass, now reuniting with it. The margins of the phalanx spread out at times like a cloud of skirmishers from the flanks of the main army."

Two species of eciton are totally blind, and the habits of these differ from those above described in that they march exclusively under covered roads or tunnels. The van of the column is constantly engaged in rapidly constructing the tunnels through which the army or regiment advances as quickly as they are made. Under the protection of these covered ways the ants travel at a surprising rate, and when they reach a rotten log or other promising hunting-ground, they pour into all the crevices, etc., in search of prey. Bates says:—

The blind ecitons, working in numbers, build up simultaneously the sides of their convex arcades, and contrive, in a wonderful manner, to approximate them and fit in the keystones without letting the loose uncemented structure fall to pieces. There was a very clear division of labor between the two classes of neuters in these blind species. The large-headed class . . . act as soldiers, defending the working community (like soldier termites) against all comers. Whenever I made a breach in one of their covered ways, all the ants underneath were set in commotion, but the worker miners remained behind to repair the damage, whilst the large-heads issued forth in a most menacing manner.

These two blind species of eciton are particularly interesting from the fact that in a part of the world so remote from

them as western Africa there is another genus of military ant, also blind, which in all its habits closely resembles the blind ecitons of Brazil. For, like the latter, *Annornia arcens* march in long close columns through tunnels, have no fixed nest, but make temporary halts in shaded places, and are no less organized, remorseless, and irresistible than their American congeners. In one curious particular, however, they differ; the relative position of the marchers and the carriers is reversed, for here the carrier columns occupy the middle place, while the marching columns with their officers occupy the flanks. When overtaken by a sudden African rain-storm, these ants congregate in a close mass, with the younger ants in the centre; they thus form a floating island.

It is remarkable that ants of different hemispheres should manifest so close a similarity with respect to all these wonderful habits. The chasseur ants of Trinidad, and, according to Madame Merian, the ants of visitation of Cayenne, also display habits of the same kind.

Special instances of the display of high intelligence.—I shall conclude this brief résumé of the more important facts at present known concerning the psychology of ants with a few selected observations of the display of high intelligence. It is always difficult to draw the line between instinct and reason, between adjustive action due to hereditary or purposeless habit, and adjustive action due to individual and purposive adaptation. But we may be least diffident in accepting as evidence of the latter cases where animals exhibit a power of adapting their actions to meet the requirements of novel circumstances—or circumstances which cannot be supposed to have been of sufficiently frequent occurrence in the life-history of the species to have developed instincts of mechanical response in the individual. It is in view of this consideration that the following instances are selected.

Ebrard records in his "*Etudes de Mœurs*" an observation of his own on *F. fusca*. The ants were engaged in building walls, and when the work was nearly completed there still remained an interspace of 12 or 15 mms., to be covered in. For a moment the ants were thrown out, and

seemed inclined to leave their work, but soon turned instead to a grass-plant growing near, the long narrow leaves of which ran close together. They chose the nearest, and weighted its distal

end with damp earth, until its apex just bent down to the space to be covered. Unfortunately the bend was too close to the extremity, and it threatened to break. To prevent this misfortune the ants gnawed at the base of the leaf until it bent along its whole length and covered the space required. But as this did not seem to be quite enough, they heaped damp earth between the base of the plant and that of the leaf, until the latter was sufficiently bent. After they had attained their object, they heaped on the buttressing leaf the materials required for building the arched roof.

This observation naturally leads to two others by two different observers. Thus, Moggridge says: "I was able to watch the operation of removing roots which had pierced through their galleries, belonging to seedling plants growing on the surface, and which was performed by two ants, one pulling at the free end of the root, and the other gnawing at its fibres where the strain was greatest, until at length it gave way." Again, as previously quoted in another connection, he says that two ants sometimes combine their efforts, one stationing itself near the base of a footstalk and gnawing at the point of greatest tension, while the other hauls upon and twists it.

The other observer to whom I have referred is M'Cook, who says of the harvesting ants of America that he has seen "the workers, in several cases, leave the point at which they had begun a cutting, ascend the blade, and pass as far towards the point as possible. The blade was thus borne downward, and as the ant swayed up and down, it really seemed that she was taking advantage of the leverage thus gained, and was bringing the augmented force to bear upon the fracture. In two or three cases there appeared to be a division of labor; that is to say, while the cutter at the roots kept on with his work, another ant climbed the grass-blade, and applied the power at the opposite end of the lever. This position may have been quite accidental, but it certainly had the appearance of voluntary co-operation."

These observations serve to render less improbable the following quotation taken from Bingley's account of Captain Cook's expedition in New South Wales, and vouched for by Sir J. Banks. Green ants were seen forming their nests in trees by "bending down several of the leaves, each of which is as broad as a man's hand, and glueing the points of them together so as to form a purse. . . . We saw thousands uniting all their

strength to hold them in this position, while other busy multitudes within were employed in applying the gluten that was to prevent their returning back."

Moggridge says that he has seen the harvesting ants of Europe clustering round the larva of a certain beetle, and directing it towards some small opening in the soil, "which it would quickly enlarge and disappear down;" and he believes that "these attentions were purely selfish," the ants availing "themselves of the tunnel thus made down into the soil."

M'Cook says of the harvesters of America that they dislike shade, so that if a tree grows up in their vicinity and casts a shadow over their nest they forthwith migrate. He gives in this connection a statement which I regard as bordering on the incredible, and therefore I desire it to be specially observed that it is not very evident from M'Cook's account whether he himself witnessed the facts. The facts, however, which he narrates are that a peach-tree having grown up so as to overshadow a nest of harvesting ants, the latter climbed the tree to strip off the leaves. "I am convinced," says M'Cook, "that the reason for this onslaught was the desire to be rid of the obnoxious shade." If this statement had been met with in any ordinary book on animal intelligence, of course I should not have quoted it; but as M'Cook went to Texas for the express purpose of studying these ants in a scientific manner, and as the numerous other observations which he made, both on these and on the mound-building species, entitle him to respect, I have not felt justified in suppressing this statement.

The observation made by Colonel Sykes on certain ants in India has gained a wide notoriety from its having been published by Spence in his popular work on instinct. Colonel Sykes was a good observer, so that his account ought not to be questioned. He says that in order to guard his provisions from the ants he put them on a table, the four legs of which he placed in as many basins filled with water. Some ants still succeeded in scrambling across the water, and so the legs of the table were likewise painted with turpentine. The ants then ran up a wall near which the table stood, and when about a foot above its level, they sprang from the wall to the table.

Somewhat analogous to this is the observation of Professor Leuckhart, who placed round the trunk of a tree, which

had been visited by ants as a pasture for aphides, a broad cloth soaked in tobacco-water. When the ants, returning home down the trunk of the tree, arrived at the soaked cloth, they turned round, went up the tree again to some of the overhanging branches, and allowed themselves to drop clear of the obnoxious barrier. On the other hand, the ants which desired to mount the tree first examined the nature of the obstruction, than turned back and procured some pellets of earth, which they carried in their jaws and deposited one after another upon the cloth till a harmless road of earth was made across it.

This observation of Professor Leuckhart is in turn a corroboration of an almost identical one made more than a century ago by Cardinal Fleury, and communicated by him to Réaumur, who published it in his "Natural History of Insects" (1734). The cardinal smeared the trunk of a tree with bird-lime, in order to prevent the ants from ascending it; but the insects overcame the obstacle by making a road of earth, small stones, etc., as in the case just mentioned. On another occasion the cardinal saw a number of ants make a bridge across a vessel of water surrounding the bottom of an orange-tree tub. They did so by conveying a number of little pieces of *wood*, the choice of that material instead of earth or stones, as in the previous case, apparently betokening no small knowledge of practical engineering—a knowledge which, as we shall presently see, is also shared by the ecitons.

Büchner, in his recently published and translated work on "Mind in Animals," gives a singular observation analogous to the above, which was communicated to him by Herr G. Theuerkauf. A maple-tree standing in the grounds of Herr Vollbaum, of Elbing, swarmed with ants and aphides. In order to check the mischief, the proprietor smeared about a foot width of the ground around the tree with tar. The first ants that arrived stuck fast; but the next, seeing the predicament of their companions, turned back and fetched a number of aphides from the tree, which they stuck down on the tar one after another till they had made a bridge over which they could cross without danger.

It will be observed that all these cases, being so analogous although recorded independently by different observers, serve to corroborate one another. As such

corroboration in matters of this kind is of value, I shall here add two or three cases which go to confirm the observation of Cardinal Fleury regarding the construction of a floating bridge. Dr. Ellendorf writes to Professor Büchner that he protected a cupboard of his provisions from the invasion of ants by standing the legs of the cupboard in saucers filled with water. He adds:—

I myself did this, but I none the less found thousands of ants in the cupboard next morning. It was a puzzle to me how they crossed the water, but the puzzle was soon solved. For I found a straw in one of the saucers. . . . This they had used as a bridge. . . . I pushed the straw about an inch from the cupboard leg, when a terrible confusion arose. In a moment the leg immediately over the water was covered with hundreds of ants feeling for the bridge in every direction with their antennæ, running back again and coming in ever larger swarms, as though they had communicated to their companions within the cupboard the fearful misfortune that had taken place. Meanwhile the new comers continued to run along the straw, and not finding the leg of the cupboard, the greatest perplexity arose. They hurried along the edge of the saucer, and soon found where the fault lay. With united forces they pulled and pushed at the straw, until it again came into contact with the wood, and the communication was again restored.

The military ants, both in America and Africa, exhibit still more extraordinary resources in the way of bridge-making. Thus Belt says of the ecitons: "I once saw a wide column trying to pass along a crumbling, nearly perpendicular, slope. They would have got very slowly over it, and many of them would have fallen; but a number having secured their hold, and reaching to each other, remained stationary, and over them the main column passed. Another time they were crossing a watercourse along a small branch, not thicker than a goose-quill. They widened this natural bridge to three times its width by a number of ants clinging to it and to each other on each side, over which the column passed three or four deep; whereas, excepting for this expedient, they would have had to pass over in single file, and treble the time would have been consumed." It is remarkable that the military or driving ants of Africa exhibit precisely similar devices for the bridging of streams as the ecitons of America, namely, by forming a chain of individuals over which the others pass. By means of similar chains they also let themselves down from trees.

But of the ecitons another and more recent observer gives an account of a yet more remarkable device, although no doubt a development of the one just described. This observer is Herr H. Kreplin, who lived for nearly twenty years in South America as an engineer, and often had the opportunity of watching the ecitons. He writes to Büchner under date 1876 as follows:—

If the watercourse be narrow, the thick-heads (officers) soon find trees, the branches of which meet on the bank of either side, and after a short halt the columns set themselves in motion over these bridges, rearranging themselves in a narrow train with marvellous quickness on reaching the further side. But if no natural bridge be available for the passage, they travel along the bank of the river until they arrive at a flat sandy shore. Each ant now seizes a bit of dry wood, pulls it into the water and mounts thereon. The hinder rows push the front ones ever further out, holding on to the wood with their feet and to their comrades with their jaws. In a short time the water is covered with ants, and when the raft has grown too large to be held together by the small creatures' strength, a part breaks off and begins the journey across, while the ants left on the bank busily pull their bits of wood into the water and work at enlarging the ferry-boat until it again breaks. This is repeated as long as an ant remains on shore.

I shall now bring these numerous instances to a close with a quotation from Belt, which reveals in a most unequivocal manner astonishing powers of observation and reason in the leaf-cutting ants of South America, the general habits of which we have already considered.

A nest was made near one of our tramways, and to get to the trees the ants had to cross the rails, over which the wagons were continually passing and repassing. Every time they came along a number of ants were crushed to death. They persevered in crossing for some time, but at last set to work and tunnelled underneath each rail. One day, when the wagons were not running, I stopped up the tunnels with stones; but although great numbers carrying leaves were thus cut off from the nest, they would not cross the rails, but set to work making fresh tunnels beneath them.

Such, then, are some of the more well-established facts regarding the intelligence of ants, and taken altogether they certainly seem to justify the remark of the most illustrious of naturalists: "The brain of an ant is one of the most marvellous atoms of matter in the world, perhaps more so than the brain of a man."

GEORGE J. ROMANES.

From The Spectator.

YVOIRE.

[FROM A CORRESPONDENT.]

THERE is probably no place on the Lake of Geneva less known and better worth visiting than Yvoire. Although now little more than a lacustrine fishing village, inhabited by peasants and fishermen, its picturesque position, at the extreme point of the promontory which marks the limit, on the Savoy side, between the great and the little lakes, its old, ivy-mantled castle and crumbling gateways, its history and its antiquity, make it one of the most interesting localities in the basin of the Lemman. Its origin dates back to prehistoric times; it is probably as old as Geneva, and like Geneva, was a place of importance before the Romans conquered the country of the Allobroges. In the Middle Ages, when the roads were ill-kept and worse guarded, and the lake was the chief highway between France and Savoy, and between Geneva and the valley of the upper Rhine, the possessor of the promontory and castle of Yvoire controlled the navigation of the Lemman. The barons of Yvoire, who boasted that their race was as old as the lake itself, and that they were directly descended from Niton, a Celtic saint and hero of pre-Roman times, claimed, as their hereditary, immemorial right, toll from all passing vessels, guaranteeing them in return against the depredations of their allies and vassals, the pirates of the Chablais. In war-time, it was the habit of the lords of Yvoire to cruise about the lake in their galleys, and levy contributions on friend and foe alike; and during the dominion of the Burgundian kings, the waters and shores of the Lemman were the scene of many a fierce encounter. Amadeus VIII. of Savoy was the first ruler of the land who reduced it to subjection, checked the turbulence of its seigneurs, and crushed piracy. Under his reign, and that of his successors, Louis, Yolande, and Philibert le Beau, who kept their court alternately at Thonon, La Ripaille, and, until the city won its independence, at Geneva, peace prevailed in the land, and the barons of Yvoire exchanged the calling of freebooters for the rôle of courtiers. But in 1536, Charles III. waged an unsuccessful war with Geneva and Berne; Vaud and the Chablais were the prize of the victors, and the fortunes of Yvoire sank to their lowest ebb. Baron Humbert, who had taken an active part in the contest, both

by lake and land, lost the greater part of his fortune, and died of chagrin at the age of forty, leaving to Jean, his only son, little more than the old castle and the rock on which it stood. This Jean, afterwards known, and still spoken of in the Chablais, as *Jean au Bras de Fer*, was the most remarkable of the lords of the promontory, if we except the mythical Niton; and albeit some of the exploits attributed to him partake of the fabulous, he was, nevertheless, a sufficiently historical personage, and his life abounded with romance and adventure. Shortly after he came to man's estate, the young baron, weary of the monotony of Yvoire, and disgusted with the narrowness of his means, went to seek his fortune in foreign lands. Ten years later he returned, bringing with him a black Barbary horse, a Moorish servant, an iron arm (he had lost the original in battle), and very little money. He found the Chablais (that part of northern Savoy contiguous to the territory of Geneva) still under the dominion of the lords of Berne, and piracy, which had been put down by the dukes of Savoy, almost as rife as in the days of his freebooter forefathers. This was in 1564, and the warm welcome Jean received from his ancient vassals of the promontory, and the detestation they expressed for their new masters, suggested to him the bold idea of retrieving the fortunes of his house by driving the Bernese out of the Chablais, and restoring the province to him whom he deemed his lawful prince, Emmanuel Philibert, duke of Savoy. To this end, money was necessary, and though the baroness, his mother, had made some savings during his absence, they were of small amount, and altogether inadequate for the enterprise which he contemplated. But the castle was a resource in itself; it commanded the strait between the *grand* and the *petit lac*, and with a swift galley always in readiness at the foot of the rock, he could compel every passing craft to comply with ancient custom, and render to the lord of Yvoire his due. With the help of his man Abdallah, a clever seaman whom he had taken prisoner in a fight with an Algerian rover, and the people of the promontory, who provided the timber and much gratuitous labor, a boat was built, the like of which had never before been seen in the waters of Leman. Both a sailing-ship and a galley, she was banked for sixty rowers, carried three masts, six guns, and a fighting crew of fifty men. Jean called her

the "Niton," in honor of his mythical ancestor.

With so formidable a means of enforcing obedience at his disposal, the baron, as may be supposed, did not find much difficulty in collecting his dues; and it soon became a rule, to which there was rarely an exception, for trading-vessels bound to or from Geneva, Thonon, or Evian, to bear up for Yvoire, and without solicitation tender their toll. These proceedings kindled great indignation at Geneva and Berne. Peremptory orders were issued to put an end to Jean's depredations, — orders, however, which did not prove very easy of accomplishment. One day, when he was cruising in the neighborhood of La Ripaille, Bauerbach, the bailiff of Thonon, sallied out with two galleys, and tried to bar his way. *Bras de Fer* ran them both down, and passed triumphantly on. On another occasion, the "Niton," while lying at anchor off Genthod, was attacked by two brigantines and a fire-ship, under command of Admiral and Syndic Michel Rosset. But the fire-ship was a failure, the brigantines, after a sharp fight, were run ashore, and the admiral, compelled to return ignominiously afoot, entered Geneva amid the jeers of the populace. Meanwhile, news was brought to Jean that the Bernese were attacking Yvoire both by lake and land. Hurrying back with all speed, he disposed of the hostile fleet, composed of three galleys, by running down two and putting the third to flight. Then, disembarking his men, he forced the Bernese troops, who had already been roughly handled by the garrison and the country people, to make off in the direction of Thonon.

But stratagem effected what force failed to accomplish, and the bold baron of Yvoire fell at length into the hands of his enemies. In the following October, Jean resolved to celebrate the ancient and rather heathenish festival of Niton. There were games on the lake and feasting on shore, wine (the involuntary contribution of Genevan traders) flowed in abundance, and in the evening *Bras de Fer* gave a grand banquet to his friends and neighbors. Meanwhile, a force of Bernese, who had marched unperceived from Thonon, gained the castle (which had been left unguarded) under cover of the darkness, took possession of all the exits and entrances, and when the orgie was at its height the Baron de Cassonay, their commander, entered the banquetting-hall with his men-at-arms, and told Yvoire

to consider himself a prisoner. At the same time — and this was the most cruel cut of all — he handed him a warrant, dated Turin, September 15th, 1564, by which Emmanuel Philibert, king of Cyprus and Jerusalem and duke of Savoy, authorized the Great Council of Berne to seize his vassal, Jean d'Yvoire, and deliver him over to justice, "for various acts of piracy committed on the Lake of Geneva."

Jean, seeing no chance of successful resistance, yielded at discretion, and invited his captor to crack a bottle of malvoisie with him. Cassonay, who was his personal enemy, yet to whose sister, Amée de Prangins, a great heiress, Yvoire was secretly betrothed, accepted the invitation, and Bras de Fer ordered more wine. The wine was all finished, declared the major-domo, all save some *vin de Crepy*, which it would not be fitting to offer so distinguished a guest. To this Jean replied that there was plenty of malvoisie in the cellar, and asked Cassonay's permission to accompany the major-domo thither, and point it out. Cassonay agreed, but sent with his host two men-at-arms, to see that he did not escape. Jean went, but he stayed so long that Cassonay, waxing impatient, descended to the cellar in person, to ascertain what had become of him. M. le Baron was at the other end of the cellar, said the men-at-arms, who were keeping guard at the door. The cellar was searched, and although no means of exit could be found, Bras de Fer had disappeared, and it was long before the Baron de Cassonay saw him again. He had escaped by a secret passage, which led to the foot of the rock, where he found his Barbary horse. Mounting him, he plunged into the lake, and turned his head towards Promenthoux, on the opposite side of the lake, where dwelt his lady-love, Amée de Prangins. The distance is little more than two miles; the horse was an excellent swimmer, and (according to tradition) he carried his master safely across, and then sank at his feet and died. Amée was persuaded by her lover to accompany him to Italy, where they were married, and Jean took service in the Venetian navy. When, a few years later, the Chablais was reconquered by the duke of Savoy, the baron returned with his wife to Yvoire; but the greater part of his after life was spent on the shores of the Adriatic.

All this, and much more, I had read in

a curious and long-forgotten book, half history, half romance, by the late James Fazy, once dictator of Geneva; but I was not aware, until a few days ago, that the house of Yvoire still flourished, and that the castle and domain are to this day the property of a direct descendant of the mythical Niton and the corsair lords of the promontory. The family must be one of the oldest in Europe.

Yvoire is rather difficult of access. The steamers touch there at long intervals and inconvenient hours, and from Geneva the road is long, and not very interesting. The easiest way of reaching the place is by boat to Nernier, whence, in little more than forty minutes, the journey may be completed on foot.

From Nernier, Yvoire is entered by an ancient gateway, which has its counterpart on the eastern, or Excenevrex side. The walls have long since disappeared, but the line of the moat can still be distinctly traced. The village consists almost exclusively of farm buildings and peasants' houses. The inhabitants are a simple, half-amphibious people, equally at home on land and on water, who earn their living partly by agriculture, partly by fishing. M. le Baron is the principal proprietor of the neighborhood; but "all the world," I was glad to hear, "has a bit of land." There are two auberges, where you may get a tolerable *vin du pays* and an excellent omelette, but Yvoire boasts neither shop nor hotel. The only incongruous thing in the place is a detestably tawdry town hall, opposite the Excenevrex gate, in the style of the second empire. The château, now reduced to a single square tower of massive construction, is not a show place; but the family being away, the servants allowed me to walk through the grounds and look into the library, a room with a vaulted roof, enormously thick walls, an old oaken floor, and some interesting portraits. The girl who acted as my cicerone pointed out whither Baron Humbert swam his Barbary horse at Promenthoux, and mentioned the legend of Jean *au Bras de Fer*, in which she had evidently the most implicit faith. The view from the terrace, embracing the French and the Swiss Jura, the mountains of Faucigny, the Pennine Alps, and nearly the whole of the valley of the Leman, is superb; and the mythical Niton, or whoever he was who first chose the rock for his eyrie, must have had a fine eye for scenery, as well as a sound military instinct.

W. WESTALL.

From The Globe.

SCENERY AND IMAGINATION.

IT is questionable whether the higher qualities necessary for the conception and execution of works of imagination are popularly recognized, or when recognized are adequately valued. Yet at the same time the world is only too eager to credit people of genius with almost miraculous powers, by means of which their incidents, characters, and scenes are evolved from nothing. If, however, we study the lives of imaginative writers in conjunction with their works, we shall find, as a general rule, that the more we know concerning the man and his environment the more numerous connections we shall trace between his actual life and the lives he depicts. Genius has to derive its sustenance from its surroundings. The flower may be rare, but it is rooted in the common ground and refreshed by the common dews. By the imperfect light that even the best biography can give, the threads of connection are too fine and too subtly intermingled for us to follow, but nevertheless, an autobiography is inscribed in the life-work of every man of genius. Our imperfect reading of it is only due to the imperfections of the key with which we are provided. Amidst much that is doubtful there are, however, certain large influences whose effects we can clearly distinguish in those unsubstantial regions where realities shift and blend at the beck of fancy. The influence of scenery is undoubtedly one of these. The tones and contours of the localities where the early years are passed are most potent, since the impressions received in youth are more vivid than those of after-life, and foster, moreover, certain predilections which are never entirely lost. The scenery of early life is the almost inevitable background of a first work, and should it have to be exchanged for other surroundings, it still exerts a power in influencing selection; the mountaineer will love mountains and the lowlander plains wherever they may find them. It has been asserted that in a true poet, the sutures of the skull are never perfectly closed; this is probably a quaint way of saying that the poet's brain is exquisitely sensitive to external impressions. Such sensitiveness, so far as it regards scenery, is very noticeable in the masters of English song. It is most faintly indicated in those periods when imitation of classical models was most prevalent, and poets did not go to

nature for their landscapes so much as to Virgil and his congeners of the bookshelf. It was after a long period of this perverted taste, during which everything distinctively English was called "low," that Cowper dared to depict the slow streams and the pollards about Olney, and even to introduce his kitchen garden into song. "The Excursion," and a hundred minor poems, attest that Wordsworth dwelt in the lake district, and wandered amongst its dales and over its mountain buttresses, watching the lifting vapor, or the dancing daffodil. Byron has given us not only English scenes, but a metrical transcript of his foreign travels. The mountains were the "familiar friends" of his early years, and to mountain districts he ever afterwards turned with delight. When living in a tamer country, he tells us how he would watch the Malvern hills at sunset, "with a sensation which I cannot describe." "Childe Harold" is the vivid record of an actual tour, "Manfred" bears the impress of travel in Switzerland, "Beppo" of days of "sweet-do-nothing" in Venice. Elsewhere he recalls his footsteps in Italy, his sailings over the blue *Ægean*, and his wanderings in that mountainous Greece he loved and died for. Much wonder has been wasted on the marvellous fact that Keats, "the Cockney poet," the medical student, should have conceived the lovely visions of his verse under the smoky clouds of Middlesex, and should have transmuted dull English lead into shining Attic gold. If, however, we turn to his life, we shall find how little of the time during which he was prolific as a poet was spent in London. He goes upon a long walking-tour through Scotland and the north of England. He sojourns by the downs and cliffs of the Isle of Wight. He stays at Winchester and laments the want of a library. He dates some of his letters from that richly-wooded vale at Burford Bridge, and there writes part of "Endymion." We find him on another occasion in South Devon, admiring the pretty valley at Teignmouth, and grumbling at the rain, which, he says, the flowers there expect twice a day, as the mussels do the tide. He settles down at the then rural village of Hampstead, separated from London by a broad band of buttercups and daisies. And his poems, as might be expected, are saturated with the spirit and detail of English scenery. About the slopes of Latmos are the flowers and the meads of England. How truly native

are the heaths, the "vestal primroses," the "cresses of the brook," "the bush screen of drooping weeds," "the lone woodcutter," "the summer dying on the cold sward," and a hundred other touches! The dryads move through Evelyn's woods, the goddesses recline in fields shot with Chaucer's daisy.

Tennyson, as has often been remarked, is the poet of a flat country; Lincolnshire made deep impressions upon him. He is a master of the minutiae of the scenery of marsh and wold, the vaporous effects, the dawns and sunsets, the marsh plants; the rounding levels themselves, with the sluggish streams and reed-burdened meres, he recurs to again and again as though with unending delight. He deals with other localities, but perhaps never so lovingly or faithfully. He transports us to Bagdad and to the company of the good Haroun Alraschid; but even there he floats us upon the Tigris, turns "down a broad canal from the main river sluiced," and introduces a wealth of water imagery. Arthur, in the west country, passes away "down the long water opening on the deep and exquisite camoes of lowland, and fenland scenes are scattered lavishly through his works. The poet may give a semblance of reality to his creations, the novelist must. And consequently we find in the novelists a still more intimate correspondence between life and literary products. They constantly draw upon personal experience for their materials. Sir Walter Scott had lived among or had frequently traversed the picturesque wilds amidst which his characters so often move. His unstrained descriptions of Border and Highland scenes drew visitors to those districts from every part of the kingdom. Where he had not named localities, his pictures of them were so obviously taken from nature that they were easily identified. Some of them, nameless before, owe their names to his fictions. With one eye on the fish, or the "muir-fowl," he enjoyed at the same time, and as the healthy mind only can, the face of nature, and perpetuated for us many of her transient moods. In the works of Lever, a genial writer, but altogether a lesser entity, the same

thing holds. The half melancholy humor that flickered up wildly in the dilapidated castle, or the mansion too large by far for a dwindled income, was only too well known to the writer. The Lever, who depicted so graphically the troubles and struggles and follies of his countrymen abroad, and the ways of foreign magnates, was the consul whom Lord Palmerston sent to Spezzia, and who went about his consular duties with eyes unblinded by the splendors of red tape. Of Charlotte Brontë, again, we have several biographies, and the world is sufficiently familiar with the pathetic story of her life to know how charged with reality her novels are. The Villette, where Lucy Snowe suffered, was no imaginary city, but the Brussels where a certain Charlotte Brontë sojourned in a material *pensionnat des demoiselles*. The wide, rounded, heathery moors, with brawling "burns," and a sparse greenery in the valleys, and here and there a factory chimney lifted up, were the moors of Haworth, loved by that wonderful trio as no other scenery was loved. When Forster's "Life of Dickens" was published, a thousand passages in Dickens's works had a light thrown upon them, and much that had been deemed purely imaginative was shown to be absolutely real. His mastery over certain forms of landscape was seen to result from the ingrained experiences of youth; his skill in depicting the sights and sounds of rapid travel was obtained during his post-haste journalistic expeditions. In the case of contemporary authors, whose lives are known to few but their intimate friends, a chance lifting of the veil often teaches us that behind the work of imagination there exists a rare personality, and an actual experience, upon which the force of the poem or the novel depends. The rare personality is distinctly a gift; the experience is mostly such as fate imposes upon commoner people. The finest work is not done by the exercise of a fastidious eclecticism with regard to surroundings. The artist is greater than his materials. Like Gaspar Becerra, he succeeds best when he takes up the object nearest to him, the glowing brand from his own hearth.